THE UNIVERSITY
OF ILLINOIS
LIBRARY

636.505
EG
v.11

REMOTE STORAGE

Digitized by the Internet Archive
in 2022 with funding from
University of Illinois Urbana-Champaign

https://archive.org/details/eggsofficialorga11unse

636.505
EG
REMOTE STORAGE
v. 11. #6
#26
stubs

Wednesday, January 7th, 1925.

EGGS

THE OFFICIAL ORGAN OF THE SCIENTIFIC POULTRY BREEDERS ASSN.

(Founded in 1912 by RANDOLPH MEECH).

Registered at the G.P.O. as a Newspaper.
Vol. XI. No. 1. Copyright.

Edited by TOM NEWMAN.
Price TWOPENCE.

Twelve Months Post Free 12/8
Six Months „ „ 6/4
Three Months „ „ 3/3

THE LIBRARY OF THE
AUG 28 1925
UNIVERSITY OF

A Group of some of Miss Malcolm's and Mrs. Pember's Professional Staff and Pupils at Wellingham Poultry Farm, 1925 Season.

3646 EGGS
IN THREE YEARS
FROM 6 HENS

This is the record of success achieved by Mr. J. Collinson, of Nateby, Garstang. Mr. Collinson has used "BUFFKING" Tonic regularly in his birds' mash, and he gives "BUFFKING" full credit for this fine record.

Another user, Mr. J. Reeder, of Ellel, has one hen, seven years old, which has had "BUFFKING" regularly and is laying now five eggs each week.

You never need fear any harmful results when you use "BUFFKING."

"BUFFKING" increases the bird's stamina, helps it to lay abundantly, naturally. It has no harmful effects.

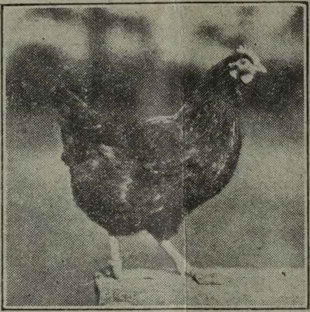
Give it regularly and note the wonderful difference to your stock.

Buffking
Regd.

In Tins at
1/3. 2/4, 4/6, 8/6.
From all dealers Agents wanted

In case of difficulty send P.O. for size required. Post free.

J. THOMAS (GARSTANG) LTD., GARSTANG.
B10



WE TRAP-NEST 2,000 PULLETS THROUGHOUT THE YEAR.

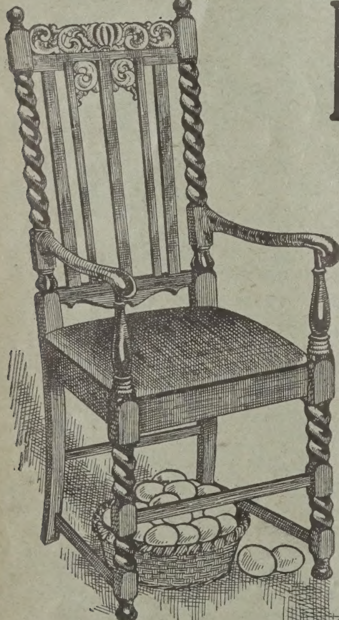
R.I.R. Pullet No. 44, bred from a "Heydown" hen, with record of 517 eggs in two years.

Early Hatched Pullets similar to the above from **10/6** each; individually recorded Cockerels, from **21/-**.

Sittings and Chicks in our Five Varieties Now Booking.

**RHODE ISLAND REDS, WHITE LEGHORNS,
BLACK LEGHORNS,
WHITE WYANDOTTES, LIGHT SUSSEX.**

John H. Dowden & Son.
M. Council S.P.B.A.,
National Poultry Council,
Fellow N.U.P.S.,
Southern Committee N.P. Institute,
"HEYDOWN," HEATHFIELD, SUSSEX.



Furniture and Incubation

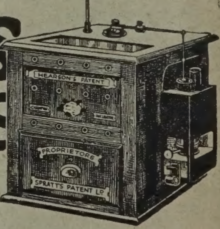
HERE is an illustration of a beautiful hand-carved Jacobean chair—a piece of furniture that would enhance the appearance of any room. But it won't hatch eggs!

And that's just the trouble you will have with your hatching this season if you don't decide on the Hearson Incubator to-day.

The Hearson is made for your hatching sheds. It is built up to the highest pitch of perfection with one sole object in view—a consistent and efficient service that is going to double your rearing profits this season.

You are not buying furniture when you get an incubator. Look for the machine that makes the 100 per cent. hatch a concrete fact — that ensures uniform heat, correct moisture, plenty of fresh air—and that will be as good forty years hence as it is new to-day. The only machine that fulfils all these conditions is the Hearson. And remember, too, a well-known saying adapted for the poultryman, "A thing of profit is a joy for ever."

Hearson's
INCUBATORS



Write to-day for your big FREE copy of the invaluable booklet on incubation—"THE 100 P.C. HATCH," to Sole Proprietors: SPRATT'S PATENT, LTD., 24/5, Fenchurch Street, London, E.C.3.
West End Showrooms: 14, Princes St, Hanover Sq. W.

636.505
EG
v. 1

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, JANUARY 7th, 1925.

Editorial.

The following paper was read at a meeting of Lancashire Breeders at Preston, on Tuesday, January 6th, 1924:—

BREEDING.

My paper to-night is on a subject of which we have admittedly much to learn. The value of these conferences is in the interchange of ideas. You may not agree with anything I say; that does not matter, the discussion which follows may teach us something of value, if so the evening will not be wasted.

We will, first of all, deal with line-breeding. There is hardly any subject which is so imperfectly understood, for I am continually being asked by people, whose stock is decidedly second grade: "Shall I line-breed?" They seem to think it leads to breed improvement. That is not the case, but we will come to that presently. You know by line-breeding we mean the restriction of the mating to one single line of descent, and its object is to "fix" desirable characters. That word "fix" conveys rather a false idea. In reality, having selected for a specific character or characters, say egg production, our object is to prevent the introduction of others which are likely to prove dominant to those on which our selection has been based. For example, we have linked with heavy egg production; the characters—early maturity, fast rate of winter production, heavy rate of spring and summer production, and fast rate of autumn production, and non-broodiness. Now if we depart from our line, which we have bred "pure" for these characters for several generations, the argument is that we may introduce such characters as late maturity, slow rate of winter production, slow rate of autumn production, and broodiness, which would render high egg records impossible. It is our object when breeding to avoid as far as possible wide variation. We get variation because the individual is the product of two others, and necessarily partakes of the characters of both, and so differs from either. If the blood lines are the same the variation will be small, but if they differ greatly, as in cross-breeding, they will be wide.

Now I am coming to a point on which I am sure you will disagree with me. I am going to ask whether line-breeding is advisable, and whether it is necessary for heavy egg production. *In my opinion it is not*, although I quite appreciate that the mating of two closely related individuals, even sire and daughters, may at times be not only useful, but advantageous. I know line-breeding has been very extensively practised in Lancashire, and you will no doubt have plenty of evidence that it is justified, but, understand please, that I am not asserting anything—only questioning.

You will agree with me that only an experienced breeder should attempt line-breeding, and even he must keep his eyes open for the first sign—not that he has bred too closely, for if you have exceptional individuals you need not worry much about their relationship, but of the effect of the inclusion of an inferior individual, which may not always be evident externally. Line-breeding necessitates the most careful individual selection of every bird in the breeding pen, not merely by the trap-nest, but for type, constitutional vigour, body size, and size of egg. If you fail in your selection in these respects, your line will very soon go to pieces. I said just now that line-breeding does not lead to breed improvement. The actual mating or breeding in line does not do so; it is the continuous selection of the *superior individual* which it necessitates that leads to breed improvement.

In breeding for heavy egg production you are up against certain things, as you always are when breeding for a specific factor—something has to go. In this case we will take size. The fancier accuses us of breeding bantams. It is far easier to get the size and feather he needs for exhibiting than it is to maintain body size with heavy egg production. Early maturity is linked with high fecundity. That is to say, that in selecting for heavy egg production, your best layers mature sexually earlier than the others, and this trait they will transmit to their progeny both male and female. Years ago, before the day of the trap-nest, we used to say that a pullet should start to lay at 10 months old. Now if she starts at five we don't think it very extraordinary. The result of this precocity—I think it wise to distinguish between precocity and early maturity—is that the pullet cannot derive sufficient nourishment from her food, for both egg production and bodily development. The latter practically ceases, and as the reproductive organs develop with the body, the result is the small bird and the small egg. There is another point—I am referring to the tendency of the progeny of our heavy producers to soft bone, and so to crooked breasts. In my opinion this is due to the elimination of lime through the egg, being greater than the intake, so that these precocious pullets do not get sufficient lime to make bone. In how far we shall be able to meet this by nutrition it is hardly possible to say yet, but I think this is a question which demands serious attention, as I believe it has a great bearing on the dead-in-shell problem, and therefore it is up to us to see that the breeding stock is

608054

freely supplied with lime in an easily assimilable form. You realise that line-breeding intensifies not only the strong points which we desire—in this case heavy egg production—but it also intensifies all the weak ones which are attendant on the selection for it. In this case the loss of size and the tendency to soft bone. I don't say that this might not be corrected in the hands of a skilled breeder, but the question is: Is it necessary? That is what I am going to try to answer.

Your purpose in line-breeding is to keep your strain pure for a particular factor or factors. These factors in egg production are:—

(1) Early sexual maturity. That is to say when the first egg is laid.
(2) Fast rate of Winter production.
(3) Fast rate of Spring production.
(4) Fate rate of Autumn production.
(5) Non-broodiness.

The first three of these are dominant characters, the last two are recessives. Thus if you mated one which carried the character of *non-broodiness*, which is *recessive*, and the other *broodiness*, which is *dominant*, broodiness would appear in the progeny. The same thing would occur with the recessive rate of autumn production, and the dominant slow rate; the progeny would carry the factor slow rate, with the result that you could not get high records in the progeny.

That is why I ask if line-breeding is necessary, because if you cross two strains, or even two breeds which have been "bred" pure for these five characters, then it seems to me that it is not necessary, because you would not introduce the undesirable characters, as neither parent would carry them. Of course, you would have to be acquainted with the history of every individual in the pen. I made a small experiment on these lines, which would appear to confirm what I have said, but it is too small to be relied on. If I am right, then line-breeding, with its attendant risks, is not necessary, and I think it will make a very considerable difference in the vitality of our stock. The first cross test at Bentley should give us some valuable data in this respect, if some of the competitors can give us the history of their birds.

(To be continued.)

THE MIRFIELD AND DISTRICT POULTRY-KEEPERS' ASSOCIATION LAYING TRIAL.

SECOND MONTHLY REPORT.

The 21st December closed the Second Monthly period of the Test. The health of the flock has greatly improved over the previous month. Only two pullets in hospital. Three are broody. There is an appreciable increase in egg production. The following are the leading pens:—

White Leghorns (Three Birds).—Mrs. H. Poole, 55 pts.; Ledgard & Brown, 39 pts.; Miss Mitchell, 35 pts.

Any Other Variety (Light) (Two Birds).—Davey & Sons, 33 pts.; H. Poole, 4 pts.; H. Poole, 2 pts.

White Wyandottes (Three Birds).—Mrs. H. Poole, 33 pts.; A. D. Prince, 26 pts.; A. G. V. Emen, 26 pts.

Any Other Variety (Heavy) (Three Birds).—W. Horsley, 112 pts.; T. E. Barnett, 82 pts.; P. Furness, 78 pts.

White Leghorn (Single Bird).—W. Horsley, 36 pts.; A. Blackburn, 31 pts.; C. Mellor, 22 pts.

Any Other Variety (Light) (Single Bird).—Sykes Bros., 16 pts.; F. Elmour, 14 pts.

White Wyandotte (Single Bird).—W. Horsley, 29 pts.; C. Whitley, 25 pts.; H. Crowther, 24 pts.

Any Other Variety (Heavy) (Single Bird).—W. Saxton, 26 pts.; Ledgard & Brown, 13 pts.; A. Sykes, 11 pts.

Modern Poultry Feeding.

By TOM NEWMAN.

WHALE MEAL.

I have received the following letter from Mr. Douglas Wood in reference to Whale Meal:—

"I was very interested in Mr. Wait's article on WHALE MEAL in your issue of December 17th, because three or four months ago I was approached as to whether my company would buy whale meal.

This stuff is actually on the market, and has been for some time. The manufacturers assured me that one of our large proprietary foods' companies is using large quantities of it for their mashes.

I agree with Mr. Wait in all he says, as I freely admit that I am prejudiced against it as a food for poultry.

The trouble is that we cannot classify the stuff. The sellers point out that the whale is a warm-blooded animal. Why should one suppose its oil to be less digestible than a true animal fat is? Judging by the appearance of the meal, and its analysis, it must, I think, be made from the muscle meat of the mammal, and not from spent blubber.

The makers admitted they had not so far overcome the difficulty in seeking to extract a sufficient amount of oil from it. This certainly does suggest a relation to fish meal, and so does its smell!

Last year, and the year before, and the year before that, we all thought that we were being exploited by the manufacturers of fish meal. This year we have so much dependable, high-grade meat and bone meal available, and at a considerably lower price than fish meal, that we do not expect to find fish meal prices soaring in the early months of the year. Germany has taken a lot of our fish meal, no doubt, and she is buying up our unextracted yeast—with the inevitable result—a rise of £5 and £6 per ton in our own market, and we have no substitute for it.

The upshot of my interview with the whale meal gentleman was that I ordered two cwts. of Whale meal and bone meal, in order that I might test the stuff myself if I failed to persuade the N.P.I. to do so. The National Poultry Institute, I find, is not yet sufficiently "settled in" to carry out such a test, so I am using 20 per cent. of this meal in a mash fed to nine White Indian Runner ducks (pullets) and nine others (1922) hatched. This little individual test was only started on December 6th, and so far all I can say is that I can detect nothing objectionable in the flavour of the eggs.

So long as the makers of a foodstuff for animals, etc., describe their product accurately, and give an analysis correct within the prescribed limits of variation, the Ministry of Agriculture cannot be expected to interfere. If, however, they had proof that it was harmful as a foodstuff, I think we should find they would not be slow to protect the buyer.

A great deal of committee work has been done lately with a view to redrafting the "Fertiliser and Feeding Stuffs Act (1906), and it is probable that this next year will see a new Act passed which should be greatly to the advantage of *most* Manufacturers, and Middlemen, and *all* Consumers."

Samples of whale meal, with the analysis, were submitted to me by the largest manufacturers in the kingdom in August last, and I was asked to express an opinion on it. This I refused to do unless a test was made. I could only remark on the high percentage of oil, and say that it appeared to me dangerously high. The manufacturers' contention that as the whale is a warm-blooded animal, its oil should not be less digestible than that of true animal fat, loses some of its point when we remember that the whale is not exactly a vegetarian, and we may assume that its food does to some extent affect the meat. We should open our eyes fairly widely if it was suggested that we feed the meat of any carnivorous animal to our fowls, and I think we should reject it without troubling to enquire as to the quality of the fat. The sample submitted to me was in appearance rather like a common meat meal, but the fish smell was there. I wish Mr. Wood's test was made on a larger scale, and with hens and not ducks, as the flavour of the eggs of the latter is not likely to be affected so quickly, and again we know that a duck will assimilate more fat than a fowl. We have to find out the effect on the health of the birds of feeding a food so rich in oil. In a proprietary food it is hardly likely that a percentage of animal protein will be very high.

With reference to what Mr. Wood has to say about dried yeast, this is unfortunately true. Supplies are not nearly equal to the demand, and are not likely to be for the reasons stated. Valuable though its qualities are, we must not allow ourselves to have an exaggerated idea of them, and so lose sight of the economic side. My own view is that no food in the world has a really economic value to the poultry-keeper when the price exceeds 20s. a cwt., with the single exception of milk. Yeast was of value because of its high content of "B" vitamin, its protein; it is an appetiser, and had a tonic value. That we are losing a really valuable foodstuff we cannot deny, but when prices exceed values, we must look elsewhere, and although Mr. Wood says we have no substitute, I am by no means sure one cannot be found. We know that medical men have "discovered" yeast, and that it is now a panacea for all diseases vieing with quack medicines, thanks to efficient advertising. I think we can find a pretty good substitute at a much lower price, and I should like to have an opportunity of giving it a thorough test against yeast.

Some Fruit-Growing Notes

to help Poultry-Keepers.

By F. W. WHEELER, F.R.H.S.

Continued.

STOCKS.—When speaking of this one must remember that many varieties are planted on both the Paradise and free stock, often arranged alternately, and various points influence the decision.

Speaking of your pear fertility, I am inclined to think, with others, that on the heavier land it is advisable to use the Quince stock. I cannot say that I have had sufficient experience with this popular commercial pear to speak with authority, but I might pass on the opinion of a big grower respecting this variety. "It is a slow and rather weak grower on the quince, but is generally best on this stock planted deeply. The fruit comes larger, cleaner, and of better quality on quince. By good cultivation, hard spur-pruning, also severe thinning, it can be grown to a good market size. It will succeed on heavy, strong and rich soils as well as lighter land."

DISTANCES.—As regards selecting upright growers, I do not think that when planting as much as 30 ft. apart it is necessary to confine oneself to these sorts.

Re "Lord Derby."—It should do well in your land. In fact it succeeds in nearly all soils and situations if it is land that will grow fruit. Bramley's Seedlings, being well known for its success on heavy land (when other kinds are apt to fail), should be a good apple for you as an alternative and follower to Lord Derby.

Your selection of Worcester Pearmain, as a dessert variety, is good; but do not forget that when once the foundation of the head of the tree is formed and established you must prune lightly and with care, because it is one of the "tip bearing" varieties, and the fruit will come on lateral, anything from three inches to a foot.

WIND.—Trees exposed to strong winds and gales are checked in growth, and the providing of a border of Damsons or Plum Trees along one, or even two, sides of the field should be considered. Observation of how the prevailing winds have affected neighbouring trees can be of great help.

WEST SURREY POULTRY SOCIETY.

WINTER LAYING TEST, 1924-5.

Report for Second Period—Nov. 2nd to Nov. 26; Dec. 4th to 6th.

Class I. Section A. Heavy Breeds.—H. W. Homewood (L.S.), 98 pts.; H. W. Homewood, Pen 1 (R.I.R.), 91 pts.; H. Rowntree, Pen 2 (W.W.), 78 pts.; H. J. Willis (W.W.), 77 pts.; Hudson Bros. (W.W.), 76 pts.; Burrows Lea P.F. (W.W.), 73 pts.

Class I. Section B. Light Breeds.—Hudson Bros., Pen 1 (W.L.), 72 pts.; Burrows Lea P.F. (W.L.), 65 pts.; W. E. Saul, Pen 1 (W.L.), 43 pts.; Mrs. Harding (W.L.), 34 pts.; H. Rowntree (B.L.), 33 pts.

Class II. Section C. Heavy Breeds.—Mrs. Wiltshire (W.W.), 22 pts.; E. Thompson (R.I.R.), 12 pts.

Class II. Section D. Light Breeds.—Hudson Bros. (W.L.), 13 pts.; W. E. Saul (W.L.), 10 pts.

Answers to Queries.

By the **EDITOR.**

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

F. C. (Wickham) has reared chicks on the method advised in the article "From Shell to Maturity," and finds that the pullets come on to lay too early, consequently he suffers badly from the neck moult and lack of eggs in the late autumn and early winter, and asks for a formula which will prevent this. He also has a Leghorn cockerel bred from a sitting of eggs from well-known breeder, which has a crooked breast, and the same trouble has developed with three pullets hatched from this sitting. His own birds reared under exactly the same conditions are normal, and he wishes to know if it is safe to breed from this cockerel. F.C. must understand that early maturity is a matter of inheritance, and the feeding will not greatly influence it, except it be of too stimulating a nature where an excess of protein is fed. This is not the case in the formula given, and I cannot give a formula which will prevent chicks coming into lay too early which would not at the same time check development. It would not be advisable to use this cockerel in the breeding pen; the indications are that he has inherited the tendency to soft bone from his dam, and he is likely to transmit it.

D. S. (Thorpe) paid high prices for chicks "guaranteed our 280-egg strain." They have proved most disappointing, eggs being of such rare occurrence that he has to send out to buy what he wants for household use. A friend advises crossing with a Leghorn cockerel next spring (his birds are Wyandottes), and promises an egg a day per bird. D.S. is now using a well-known proprietary mash, but the eggs are still lacking, and he wants a formula which will produce eggs. Sorry for you D.S., you have yet to learn that the chocolates wrapped in silver paper are not necessarily of finer flavour than those unwrapped. The advertiser from whom you bought the chicks is nothing but a dealer, and we would not accept his advertisement in "Eggs." Two hundred and eighty egg strain means nothing, the birds are duds, and your best plan is to get rid of them. The mash you are using is a good one. To breed from such birds would be a mistake; don't listen to your friend, you will only be disappointed.

W. H. J. (Ipswich). It is best to toe-punch chicks immediately they are hatched, otherwise how can you distinguish the pedigree? There is no objection to stamping eggs for hatching. Yes, the method you describe would give you the correct way of ascertaining the cubic foot per bird. The best month to hatch R.I. Red-Light Sussex from a profitable point of view would be January, as you will get high prices for your cockerel chicks in the spring, and the same applies to the Light Sussex-White Bresse. For egg production, however, it would be better to defer the former until March and the latter until early April. If you send the hen and chicks by rail, the best way will be to put the hen in a box on a nice bed of hay and pack the chicks in a chick box on the outside. You should not take your chicks from an incubator and put them into a cold brooder. They should go direct to the heated brooder, but you could put them, as you suggest, in a box lined with hay with a nest in the centre, for the chicks, with a frame of muslin stretched over. You could leave them there for twenty-four hours. I do not know why the makers of the heated brooder should make this suggestion, but it is always advisable for chicks to have as long a rest as possible after hatching.

O. B. (Gilderstone) asks for advice as to feeding biscuit dust. He wants to know if he could use successfully a dry mash of : Five parts middlings, 2½ biscuit dust, one broad bran, one clover meal, and one meat or fish meal. I think it would be a great deal improved if he used two parts biscuit dust, and added one part of S.G.O., or maize meal. The mash is a little lacking in variety, and unless the middlings were of good quality, the bulk would be too great.

L. B. (Leominster) sends six unhatched eggs, and wants to know what is wrong with his incubating. Two are clear, L.B., two died about the seventh day, and the other two about the fifteenth. The indications are that the stock birds are at fault. Is the male sufficiently matured? There is nothing to suggest that your methods of incubation are wrong. In reply to a further question. The sample of fish meal is a very poor one. It is very smelly, and there is an excess of oil. I would not advise you to use it.

J. S. (Herne) also wants advice as to incubation. He is running two 390 hot-air machines in a disused stable, and results last year were not satisfactory. Makers' instructions were followed. The temperature of the stable varied considerably. You must not blame the makers, J. S., but study your own conditions. I would suggest that you do not remove either felt until the nineteenth day, then remove one, and leave the other in. Start the machine at 105 degrees the first week, 104 the second, and 103 the third; do not cool the eggs. If the temperature of the stable falls below 50 degrees supply more moisture.

POST-MORTEMS.

J. H. M. The post-mortem examination of the chicks showed the cause to be pneumonia in every case. Decomposition had advanced too far to be able to make a positive statement as to the cause of the pneumonic condition, but from the general appearance of the bodies, and the colour of the blood, poisoning by stove fumes suggests itself as a more likely cause than chilling. I am of opinion that the trouble may be considered under the term, "Brooder pneumonia," rather than that caused by the Aspergillus Fumigatus (a fungus), which, of course, is infectious.

E. R. From the conditions found by post-mortem in the R.I.R. hen, it is most remarkable that she managed to live so long and show no symptoms. A fully-shelled egg had escaped from the oviduct through a rupture of that organ, and was lying free amongst the intestines; another egg, partly shelled and partly soft, was protruding through the vent, and was attached to the free one. In addition to this, there was a soft-shelled egg in the oviduct. The rupture and escape of the egg had set up septic peritonitis, to which she succumbed. The cause of the rupture was in most probability due to excessive straining, in endeavouring the lay the soft-shelled egg, the following fully-shelled one escaping through the rent in the oviduct, and the third one following that. Soft-shelled eggs are mostly due to some deficiency in the diet, lime salts in particular, and often to lack of an adequate supply of water.

S. D. The post-mortem examination of the R.I.R. pullet showed the cause to be peritonitis, due to the rupture of one or more yolks still on the stalk. The cause may be considered accidental and not infectious, but the over-fatness of this bird would certainly predispose her to accidents of this kind. I should advise reducing these birds somewhat by a course of salines, such as twenty grains per head daily of glauber salts, given either in the mash or water to drink, and more exercise.

GLAMORGAN AGRICULTURAL COMMITTEE.

COUNTY EGG-LAYING TRIALS, 1924-25.

From 19th October, 1924—22nd August, 1925.

Report for Second Month.

Light Breeds. (All White Leghorns).—G. Bundy, Ton Pentre, 78 pts.; J. Joshua, Tondu, 64 pts.; Mrs. E. H. Parry, Rowe Llantwit Major, 59 pts.; Howell and Phillips, Barry, 58 pts.; T. Parry Tucker, Llanrhiddian, 56 pts.; C. Spiller, St. Fagans, 40 pts.

Heavy Breeds.—R. J. Evans, Abertridwr (R.I.R.), 128 pts.; J. R. Thomas, Barry (R.I.R.), 125 pts.; J. Joshua, Tondu (R.I.R.), 124 pts.; Harrop-Griffiths and Hall, Bridgend (R.I.R.), 92 pts.; G. Tucker, Port Eynon (W.W.), 91 pts.; J. Arnott, Clydach (W.W.), 84 pts.

Correspondence.

POULTRY HOUSES.

To the Editor of "Eggs."

Sir,—I read with interest Mr. Toovey's letter on poultry houses—good and bad. My first impression was that of wonder whether he was in earnest, or if it was only the effects of a hasty lunch. The fact that he has scrapped more poultry houses than any amateur alive would be a doubtful qualification to dictate on this subject, and reminds one somewhat of the woman who claimed great knowledge of the rearing of the children because **"she had buried** seven of them!"

Lest he is already reaching for his pen before reading more, let me hasten to state that I am perfectly conscious of Mr. Toovey's success. His name is so well known in the poultry farming world as a result of his vast experience, and on account of his public service in the best interests of the industry, that his reputation for sound judgment is not likely to be lowered by random ideas emanating from the Irish Free State.

But I also have experimented a good deal in houses for poultry, and, although I have not scrapped any in the ordinary sense, having sold off some at cost (and they were standard designs at that), my opinions are quite the opposite to his, except in regard to cost.

From observation and experience I favour the span-roofed houses and ridge ventilation, as compared with the type Mr. Toovey advocates. The former cost more and are a trifle more difficult to make, but they are so satisfactory that the first cost is forgotten.

Unless we approach every problem under the assumption that "there is nothing new under the sun," I cannot follow his reasoning about span-roofs and apex ventilations being part and parcel of the unsound practices of a former generation.

The old apex house on wheels, of course, is nothing to write home about, but it is still useful on general farms.

It is, however, **poultry farming** we are dealing with now, so I am sending illustrations of two types of houses which I have found satisfactory.

Mr. Toovey believes in plenty of light, but boards his houses up four feet in front. He makes them eight feet high, because with less fall in the roof over a house fourteen feet wide the proximity of the rafters and supports to one's head would become a nuisance. The wide hood (20 inches), hinged so as to be let down in very wet or stormy weather, leaves a little over two feet to let in light which is "so important."

We all take ourselves rather seriously at times. Some put antiseptics in the hens' food and drinking water, and ventilate the house from the back, and so attribute the freedom from disease to these precautions. I do none of these things, yet the health of the stock is good.

Football clubs carry golly-wogs, and the greater their success the more regard they have for their mascots. A lady opens and inspects her umbrella in the house; later she slips on an orange peel in the street and associates the mishap with the umbrella incident. I can better understand the materialistic views of the boxer who puts a horse shoe in his boxing glove for luck!

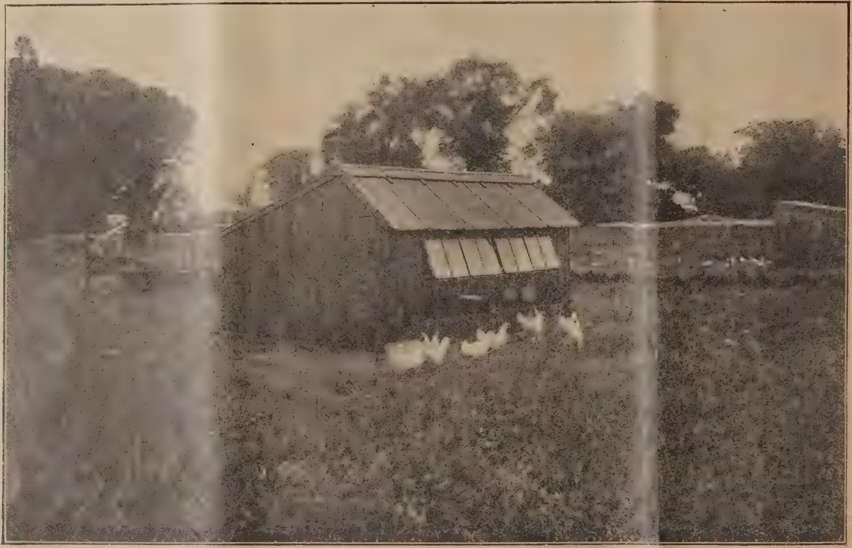
Some years ago in "Eggs" controversy raged for weeks about back ventilation, and engaged the attention of the great men amongst poultry, when the simple conclusion was, that in narrow houses —8 or 9 feet—it was unnecessary, while in wide houses it was often advisable according to situation.

So much depends on the situation and aspect of the house. I have two Hanson type houses, 60 by 9, placed respectively south-east and west, because it was convenient to do so. The one is comfortable at all times, but the other is quite the reverse in stormy weather.

Kings Langley farm lies on a sheltered slope by the side of the L.M.S. Railway, and suffers from no greater breeze than that created by the passing of the Holyhead express twice daily.

Mr. Toovey is a man of independent thought and action. He does not mind going back or forward. He has gone back to first crosses, wet mash and natural rearing. I don't suggest for a moment that he is not right—"far be me from it"—but why should he object to us going back to houses he knew twenty years ago, if we find that with some alterations they are better.

Those I refer to are not old, they are original so far as am concerned. I was not satisfied with either the Toovey or the Hanson type (I dislike bringing the latter gentleman's name into it, knowing his preference for being left alone, but his name appeared last week, anyway), so with an effort I thought some. I could not see the force of having portion of the house "outside the house" in the form of a gigantic hood, so I moved out the front wall to meet the hood, and—presto—we had the three-quarter span with ridge and back and front, and any other kind of ventilation we might fancy.



No. 1.

The house in the making caught the eye of the Dept. Poultry specialist, who got an exact model made of it and exhibited at the World's Poultry Congress and the Spring Show at Ballsbridge, Dublin, where no doubt many English poultry people attend, hence the popularity of the type of house which is now being condemned. It is comfortable in winter, cool in summer, and free from draughts. It has plenty of light and excellent ventilation. The nests are hung on a partition, and it has a window under dropping boards at back. It was designed with a view to making some to hold a thousand or two.

There are many things I agree with Mr. Toovey over. His aim at economy, standardising poultry houses for egg farmers, making walls and roof of felt, cheap thick cement floors, and perhaps running flocks of one hundred.

I live in an exposed spot, and one morning I found a house weighing one and a half tons blown completely over on its back and on to its roof.

The hens got a shock, but laid on the roof, as they could not reach the nests that day. It was a well-made house, the product of a well-known Denny firm, lean-to with slight projection from roof to catch the wind, glass shutters at front, complete with front and back ventilation. I thought again. Advertisements in "Eggs" or designs by centralising architects could not help me, so the result was square house No. 2, with nothing to catch the prevailing winds. Door and double B.-M. window at east side. Windows and hinged flaps at south and west. Roosts, dropping boards and nest underneath at north wall. It is 20 ft. by 20 ft., so holds 100 birds. Maximum space for material employed. Roof is a trifle flat, but we get no snow here now. Walls are made in eight sections, and roof is additionally supported in centre by a square pillar. The house has a square dry mash hopper (special design), square drinking vessels and square nests, each with trap front.

No. 2.

Mr. Toovey farms 8,000 birds, and I only have one-tenth of this number, but still a small man can learn a lot. I believe my birds average more than his, and this I partly attribute to comfortable housing. Ventilation in winter time is often overdone. If I had 8,000 birds—slight pause!—I have often thought I would run 2,000 in two houses to each ten-acre field with a couple of girls to tend them and a man with a cart and horse helping all. Of course, I might change my mind and house them in one hundred lots, but I think I would prefer my own to either the Toovey or Hanson types.

W. S. C.

Dublin, December 16th, 1924.

"APEX" HOUSES.

To the Editor of "Eggs."

Dear Sir,—I cannot allow Mr. Toovey's letter on Ventilation to pass. He condemns the Apex house. I can only say that I do not like an erection of that type, and whatever may be its merits with regard to ventilation, I think it is a retrograde step to fall back on the Apex house, when it should be quite possible to properly ventilate an ordinary building and without resorting to manure pits.

Mr. Toovey lives in a sheltered position (lucky man!) and no doubt the system he uses is perfect for the locality, but may I ask him, Has he ever used the house he describes for an exposed position in a **really exposed position?** Poultry farmers living in wooded, or even inland, counties in England simply do not realise what they are talking about when they give designs for exposed positions, and I am quite sure much money has been lost by people acting on those designs before they gained experience.

When I talk about exposure, I mean a place probably within a few miles of the East Coast, where a gale from any direction will blow rain through a chink, half way across the house.

I have yet to design a house that will ventilate in such a position, without blowing the birds into one corner like leaves.

Mr. Toovey says to leave 2 feet open at top, covered by 2 feet 6 inch weatherboard. I have a house with only 6 inches at top covered by a weatherboard, and when October came I had to board up 3/4ths of that. The house was quite cold to the feel, and instead of a pocket of bad air at the back you felt a gale sweeping down the roof right to the hens' heads, which are several feet below. I got one case of bronchitis and a great many birds sneezing.

My next step was, on windy nights, to fill with hessian every ventilation space remaining, and on calmer nights to pull out a little of it. According to fresh air fiends (I believe in the "fresh air," but not the "cold wind") my hens should all have gone ill, and I was a little nervous about it myself. They have not. They got better instead, and the egg supply, which had (from various causes, I admit) been languishing, came to par again.

I wish to add that on windy nights, with the entire open top stuffed with hessian, there is still sufficient air coming through the hessian to cause a gentle current. The only danger of bad ventilation is when the wind falls overnight, and it is much safer to risk that, when the weather changes so seldom—for the better, at least!

There is practically no bottom ventilation, unless one could count ¼ in. at the tops of the windows, door and exits. The real problem is to keep out the gales, and yet ventilate.

There is an admirable looking house advertised in "Eggs," which claims "perfect ventilation," and which, on account of its semi-open front, I would not in my wildest dreams set down here—now, I might have two years ago, when I first came here. It ventilates—certainly, but does it protect? There has been far too much written about the open-fronted house. In my experience it breeds roup. Make the house warm. At once the roup disappears. I do not mean make the house stuffy, but comfortable to myself; that may not mean comfortable to everyone, for so many people will sit comfortably in rooms where I am simply dying to open every window. The open-fronted house is a curse. Surely the hens know when they are comfortable. Why do they mostly go to the back perch? Simply because it is warmer—further away from the ventilation, and the hen knows best.

Now, about proper ventilation, to do away with makeshift. Mr. Toovey says if the ventilation is at the back it is too near the hens. Then why not put the hens at the higher side and turn the house round, the windows in the low side? There would still be plenty of light on the floor.

Then Mr. Toovey could have his 2 feet open if it was covered with gauze and a sliding shutter, which would give the exact ventilation desired. The traps could also have gauze so that air could enter below, and with shutters to regulate that too. The gauze itself could be made to open, and thus, the one design should do for any locality whatever, always providing that the wood is thick enough that the house is built of.

Is it not the case that roup is primarily a complaint caused by chill? That being so, is its prevalence in many cases, I do not say in all, not due merely to keeping hens too cold, or in a current of cold air? If there is any bad air about, surely the microbes therein will be far more likely to attack a hen if its vitality is lowered by being chilled? I have been rather mystified by the relation to ordinary roup borne by the diphtheretic type.

A number of years ago I built one of my first hen houses, and most inefficiently too. Two batches of birds put in it, with several months between, contracted diphtheretic roup from some cause unknown to me. The first batch all took it, and were removed. When the second batch was put in, after disinfection, etc., one day I discovered half of them bad or sickening. They may have had it before I noticed it, as I was not good at spotting an ill hen in those days.

We had the infected hens removed, and then, in spite of a friend, who was interested, I insisted on shutting a lot of the ventilations and generally making the house warmer (it was a veritable death-trap even then), and that did the trick. You will say that the second batch of hens were infected. Then why did not the second half of the second batch sicken? They had been sitting for several nights beside hens actually in various stages of sickening, and yet not another hen got a symptom. The progress of the disease was stopped absolutely dead in one day, and I cannot think that the one half of the second batch was any more immune than the other. Several of them had foul breaths when things were put right, but that was all.

The above statements do not seek to dogmatise about anything, but merely to state my present opinions on these points.

Yours, etc.,

V. O. GRAY.

COMMUNITY POULTRY FARMING.

To the Editor of "Eggs."

Sir,—From time to time there has been correspondence in the poultry papers in reference to Community Poultry Farming. An opportunity now occurs for seven or eight suitable persons to acquire, at a very low price, holdings of ten to fifteen acres each, within seven miles of Norwich, on eighty acres.

A central powerful windmill could be erected to (1) pump water, (2) generate electric light, and (3) work a grinding mill. A motor van could be jointly owned. Various forms of co-operation could be carried out, eggs for hatching, incubation, day-old chicks, etc., purchase of feeding stuffs, sale of eggs, fatting poultry, etc.

I am, Sir, yours, etc.,

T. N. D.

POULTRY COSTS.

To the Editor of "Eggs."

Dear Sir,—Sometime ago you were asking for contributions to "Eggs" on Poultry Costs. I give you below my details for the last four years, and trust they may be of some value to your readers:—

Year 1920-21. Day-old chicks—Leghorns—bought all pullets. Results for that year.

After 1920-21. One-third old birds and two-thirds pullets.

From '22 about 30 Rhodes and '23 about 60 Rhodes in same proportion; kept two-thirds pullets and one-third hens. Remainder of birds are White Leghorns.

All figures of costs are on commercial eggs, hatching sales and day-old chick sales not included. Costs of birds and eggs include water (paid by water readings quarterly), grain, mash (dry), grit, disinfectants, rent, and from 1921 the costs of chick rearing (except first chick food and paraffin) are included, and other sundries, such as poultry rings, etc. No labour charged. Birds kept in only on very bad cold wet days. Free range in winter, amongst fruit, and have access to all green stuff, carrots, artichokes, swedes, turnips, and grass pasture.

Prices received for eggs have had the cartage to station and railway charges deducted.

Hatching from 1921 has been in small batches, from two 150 and one 100 Gloucester, from January to April.

	Eggs per Bird per month.				Percentage of Eggs per month			
	1920-21	1921-22	1922-23	1923-24	1920-21	1921-22	1922-23	1923-24
Oct.	8·5	3·4	3·2	7·5	27%	11%	10%	24%
Nov.	7·6	2·2	3·7	3·9	25	7	12	13
Dec.	13·9	6·4	7·1	4·5	45	21	23	15
an.	17·5	8·6	12·2	6·4	56	28	39	26
Feb.	18·2	11·3	16·5	7·9	65	40	59	28
Mar.	22·6	18·3	21·1	15·5	72	62	68	50
Apr.	21·1	16·9	16·0	19·3	70	56	53	64
May	17·1	20·0	17·5	20·7	55	64	57	67
une	12·4	19·6	5·9	13·0	41	65	20	43
uly	12·7	13·2	7·2	11·5	42	43	23	37
Aug.	11·4	8·8	7·2	11·6	37	28	23	37
Sept.	4·9	11·5	7·7	11·5	16	35	26	38

	Average cost in Pence per Egg per month: Water, Food, Litter, etc.				Average Price in Pence received per Egg per month.			
	1920-21	1921-22	1922-23	1923-24	1920-21	1921-22	1922-23	1923-24
ct.	2·29	2·74	3·51	1·19	3·59	3·44	2·51	2·56
Nov.	2·07	4·20	2·48	2·81	3·87	4·53	3·46	3·35
ec.	1·39	1·63	1·59	2·07	4·29	3·80	2·80	3·38
an.	1·25	1·23	·91	1·73	3·40	3·03	2·19	2·97
eb.	1·00	1·24	·90	1·18	3·41	2·97	1·79	2·24
Iar.	·88	·55	·59	·78	1·99	1·64	1·08	1·70
pr.	·86	·68	·87	·72	1·73	1·19	·93	1·19
Iay	·83	·81	·91	·83	1·33	1·25	1·22	1·20
une	1·07	·83	1·57	·95	2·32	1·32	1·02	1·38
uly	1·69	1·13	1·38	·98	2·51	1·61	1·21	1·54
ug.	·88	2·94	1·18	1·09	3·03	1·51	1·76	1·90
ept.	3·16	2·34	1·17	1·29	2·85	2·44	2·08	2·16

Average cost in Shillings per Bird, per month, Water, Food, Litter, Disinfectants, and Running Expenses.

	1920-21	1921-22	1922-23	1923-24
Oct.	1·28	·77	·89	·73
Nov.	1·25	·74	·83	·83
Dec.	1·47	·76	·91	·64
Jan.	1·65	·72	·93	·79
Feb.	1·42	·75	·96	·68
Mar.	1·32	·98	1·09	·91
Apr.	1·28	·92	1·13	1·04
May	1·11	1·00	1·29	1·23
June	·98	1·05	·76	1·20
July	·86	1·28	·81	·85
Aug.	·81	1·55	·68	·97
Sept.	1·26	·86	·72	1·00

YEARLY AVERAGES.

Year.	Av. No. of Birds.	Eggs per Bird.	Shlgs. cost per Bird.	Cost of Food per Bird. (Cwts.)	Av. cost per cwt.	Av. cost per Egg. (Pence.)	Av. recd. per Egg. (Pence.)
1920-21	188	168½	16/7	1·2	16/8	1·45	2·86
1921-22	306	140	10/9	·73	12/11	1 68	2·39
1922-23	428	125	10/11	.86	12/–	1·42	1·84
1923-24	446	127	10/10	·79	12/8	1·29	2·13

HATCHING RESULTS.

Year.		
1921-22	Percent· Hatched, 71	Eggs set per Pullet, 4·2
1922-23	,, ,, 82	,, ,, 4·7
1923-24	,, ,, 70	,, ,, 5.2

Yours faithfully,
"DETAILS."

CO-OPERATION.

To the Editor of "Eggs."

Dear Mr. Newman,—I was very interested in your leading article in the issue of "Eggs," dated the 24th December, and also the letter from Mr. A. V. Clarkson. Both of these point to co-operation as being absolutely essential if poultry farming and egg farming are to remain commercial propositions. Let me say at once that I entirely agree. You state in your article that normal times have now been reached, but personally I doubt if we are at rock bottom. If we look ahead a few years, is it unreasonable to suppose that Russia will again be sending us millions of eggs, as she did before the war? True, in that event, she would probably be sending us corn as well, and so help to reduce the price of our foodstuffs; but, as business men, I maintain we have no right to bank on the latter happening. Our duty is to provide against the former. If co-operation is needed in the present state of our industry, I think that, in a few years, it will be needed a great deal more.

I ask, could anything be more unsatisfactory to business men, than to have to send their goods to dealers, and let them put *their* prices on those goods? That is what happens when the poultry farmer sends his goods to the London markets, and he has to accept any cheque they are graciously pleased to send him in exchange.

Most of us have our pet customers, and the reason why we hesitate to change is the fear of jumping from the frying pan into the fire. But the time has now come when we should realise that, in studying the interests of the industry as a whole, we shall later on reap the reward individually. We have had an excellent example quite recently of the strength of unity in the way the National Farmers' Union fought their case successfully in fixing the winter price of milk. Could they have done that a few years ago? I think not.

I suggest that, as a preliminary, a committee of the National Poultry Council should arrange to meet a Committee of the National Farmers' Union, and that these two Committees should thoroughly go into the question of co-operation, and study the best methods by which it can be attained.

It is no good crying out against the dealers. We should be no better than they are if we were in their favourable position. It is no good looking to the Government. If the gentleman who wrote in the Bible, "Put not your trust in Princes," had to re-write it now, I think he would say, "Put not your trust in Governments."

We must look after ourselves.

Yours very truly,
H. R. HUNTER.

INDIAN RUNNER DUCKS.

To the Editor of "Eggs."

Dear Sir,—You may, or may not, be aware that in June of 1924, the 5th to be exact, we received an importation of pure Native Fawn Indian Runner Ducks. As a matter of interest to all those concerned in the breed we would like to give the following account of them, as we consider it rather exceptional, taking all the circumstances into view.

Within a fortnight of their arrival they were all in full lay. During this fortnight they had to be accustomed to the trap-nest, to recover from a seven weeks' sea voyage, to acclimatise themselves, to eat entirely different food, and to generally settle themselves down to an absolutely different life to that in which they had been born and bred.

We set all the eggs we could get down before it was too late to think of rearing ducklings, and in all have now got about 100 pure-bred youngsters off them.

The ducks continued to lay right into September, and owing to shocking loss of condition we did our best to ease off egg production. In all we moved them three times, and at the end of the third move they started their moult. By the beginning of November they were more or less through this rather (to us) nerve-racking period. By the middle of November one duck had again started to lay—by the end, three. Since then, 50 per cent. of them have been in full lay, and have already put up remarkably good records.

We think that all who in any way realise the climate of the North of Scotland will admit tha this is rather remarkable for birds which hav come from a tropical fever swamp.

There has, from time to time, been a grea amount of controversy *re* the exhibition standar for Runners. The utilitarians claim that the Sho Runner is a freak, and that it has departed in typ from the original Native Runner. In fact, that a artificial Show standard has been created.

In order to dispel this error of opinion, may w add that we sent one of our ducklings, then fiv months old, to Olympia, and that it gained fourt prize. This goes to prove that the true Nativ Runner combines show points with exceptiona laying qualities, which is, after all, what i required.

As we feel sure that this information will be o great interest to duck breeders, we would be mos grateful if you would publish it in your valuabl paper. Please do not think we are merely out fo cheap advertisement—we are not. The Runner are a hobby with us, and we have never yet sol an exhibition bird, as we do not run them on commercial lines. We refuse to sell. The utility sid is different.

Yours faithfully,
B. CHISHOLM.

VENTILATION.

To the Editor of "Eggs."

Dear Sir,—Although great interest has been arouse as a result of Mr. Somerville's excellent articles i "Eggs," *re* Ventilation, the remarks have bee mostly confined to "APEX HOUSES," and little ha been said regarding the better ventilation of hover and brooders.

To my mind this would appear to be an equally, i not more important question.

The articles mentioned only dealt with the ventilation of a particular type of brooder, whereas a fe additional remarks regarding the application of the ide to other hovers would have been greatly appreciated For instance, in the case of hovers of the "pioneer" type (where the chicks are beneath a heated drum, an surrounded by a thick felt curtain, through which al fresh air must enter and foul air escape) it does no seem sufficient to place the hover on a wire nette frame—as is often suggested—to satisfactorily provid for the admission of fresh air, unless one can get a induced current. Would the provision of a few hole in the lower side of the drum result in inducing th required current? A chimney is provided to tak away the lamp fumes (the lamp being inside the drum and closed to the chicks), and it should equally serv the purpose of removing the foul air from the chicks quarters.

Perhaps some of your readers will describe any experiments made on these lines.

Yours faithfully,
W. A. DOUBLEDAY.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

THE CROAD LANGSHAN.

The Year Book of the Croad Langshan Club is, as usual, very interesting, and one may be permitted to congratulate the Secretary upon its excellence. The club is very much alive, and looks well after the interest of the breed.

The article by Mr. Sardius Hancock, "Is a New Importation Desirable"? arrests attention. Mr. Hancock agrees that the suggestion will not be acceptable to everyone, and admits that the contention that such an importation is likely to have a disturbing effect on our standard bred stock deserves respectful consideration, but he contends that arguments on the other side are more weighty. Fresh blood would revitalise exhibition stocks, and help to restore the table and laying qualities of the breed.

He also thinks that an importation of the best stock would help to settle the vexed question as to whether black in toe-nails is a certain sign of alien blood. He refers to Mr. Housman's dislike of black beaks, and asks if these marks are proof of a cross, or are they latent in all black breeds and likely to appear in the progeny at any time?

I am much interested in what he has to say on "Loose feather." He says :—"Is it fair to ask whether the Croad may not be softer in feather and more abundant in fluff than its progenitor? Without having any prejudice on the point, I am inclined to think so, as **I believe that no original breed is loose feathered.** Loose feather means waste, and Nature cannot afford waste. No loose-feathered cock can fight, and no loose-feathered hen can be as productive as the closer-feathered bird ; they fall out because they are not fit, and only when they are under the powerful protection of man can they survive."

With all deference to Mr. Hancock, I cannot see that he has made out his case for a new importation. So far as I can discover there is no evidence of the breed's decadence, and if the club continues to look after its interests as well as it does at present, there is no fear of it. The stock in the country is sufficient if well handled to preserve all its great qualities. As to the black in toe-nails being evidence of alien blood, that I should think is extremely doubtful ; it would be merely a question of the degree of pigment carried by the individual, and where careful selection for several generations has been made the black toes would be of comparatively rare occurrence. Would it not have been better to have said, "No loose-feathered bird is as productive" rather than "**can** be as productive." Mr. Hancock conveys the idea that a hen is productive because she is close-feathered. It is far more correct to say that she is close-feathered because she is productive. That is to say, that the pullet which diverts her food to egg production will have no surplus to spare for feather and fluff. There will be no surplus fat to nourish the feather as is the case with the non-layer. Further, although "Nature cannot afford waste," we know that she is often very prodigal, and it is quite possible that had environmental conditions been wholly favourable, soft feathers may have been in evidence in the progenitors of the breed. The Cochin on its arrival in this country was said to lay several eggs a day. They knew how to advertise even in those days, but Nature had been prodigal in its case with feather and fluff. Other articles in the book are from the pen of such well-known authorities on the breed as Mr. R. O. Ridley, Mr. Mullens, Mr. Cocker, Mr. Haddon Jones, and Mr. Lomas, and the Secretary.

THE INTENSIVE SYSTEM.

There are two articles in the Register which will be read with great interest, I am referring to those by our President and Captain Knight on the intensive system of poultry-keeping. Both have been very successful, and both write from long experience. Mrs. Hunter has kept poultry under intensive conditions for eleven years successfully, and she concludes her article by saying :—"Colds are unknown, in fact I rarely lose an adult bird, and I have never to my knowledge had a case of B.W.D. or roup on the farm. Many of my 1922 birds have never been outside an intensive house, and still continue to lay in splendid fashion and look the picture of health. The birds have been bred from stock which has been kept in the manner described for eleven years. To conclude, I have eight acres of meadow land at my disposal, so my birds are not kept intensively from necessity, but from CHOICE."

Capt. Knight confirms what Mrs. Hunter has said. He writes :—"I believe the intensive system could be made a success even on a large scale. I know that chicks can be reared without ever once going out on grass, also that chicks can be reared successfully from eggs laid by intensively-kept breeders."

CHANGE OF ADDRESS.

Mrs. Sedgwick asks us to notify members that she has now removed to Harfield, Hambledon, Hampshire.

THE ANNUAL REGISTER.

I hope by the time these words appear in print, all our members will have received their copy of the Register. Please note that **it cannot be sent to those whose subscriptions are not paid,** so don't write me an indignant letter if you haven't received your copy unless you have paid your subscription. I am sure the Editor is pleased with the work, and that you will be pleased with it too, and will wish to congratulate him very heartily on the success of his effort, for he has beaten all previous records. There are twenty-one articles, and you will see by the list below that they touch on a variety of subjects :—

"Exhibiting Utility Poultry."	Fred W. Wait.
"Utility Ducks."	H. B. Carrington.
"Angora Wool Farming."	Lady Rachel Byng.
"Commercial Co-Operation."	P. Hedworth Foulkes, B.Sc.
"Breeding and Rearing White Leghorns."	K. E. Field-Hart.
"A Summing-up of the Market Position."	A. V. Clarkson.
"Leg-Weakness."	Tom Newman.
"The Selection of a Breeding Pen."	Miss W. M. Ransford.
"The White Orpington."	G. C. Heseltine.
"Goats and Poultry-Keeping."	Mrs. Epps.
"Intensive Poultry-Keeping."	J. Arthur Knight.
"Prevention of Disease."	Capt. Leeney and Major Saunders.
"How to Prepare a Bird for Exhibition."	E. C. B. Boucher.
"Prolapsus."	Major Saunders, M.R.C.V.S.
"From Shell to Maturity and After."	Tom Newman.
"Notes on Utility Ducks."	A. Harold Paine.
"Circumstances."	J. H. Dowden.
"The Artificial Hatching of Duck Eggs."	Capt. R. A. Long.
"Some Aspects of the Future of Commercial Egg Farming."	P. Hedworth Foulkes, B.Sc.
"Planning a Poultry Farm."	John Meekings.
"Successful Poultry-Keeping on the Intensive System."	The President.
"Analysis Table of Foodstuffs."	
"Weight of Grains and Meals per Quart Measure."	

If one considers that this is sent free to every member, it will be unanimously agreed that he gets full value for a five shilling subscription, without taking into consideration the numerous other benefits and privileges, which are such as are not offered by any other Society in the world.

There is one correction I should like to make, and it is an important one. In the Rules for Guidance and Mating. Rule 6 should read: "NOT LESS THAN 40 EGGS LAID WITHIN ANY 90 CONSECUTIVE DAYS BETWEEN OCTOBER 15th AND JANUARY 15th INCLUSIVE." I am afraid I am to blame for this, as I should have notified the Editor in time. I should like to add, too, that for the Weights of Grains and Meals per Quart Measure, I am indebted to Messrs. J. Daffarn.

OUR FRONT COVER.

The Wellingham Poultry Farm will be well-known to our readers, because it is associated with the S.P.B.A. experiments, which have been so ably carried out by Miss Malcolm and Mrs. Pember.

Ladies have invaded the Poultry World with marked success, and the "mere man" must acknowledge that they can compete with him on equal terms.

The Wellingham Farm is one of the many examples of this. It is a big undertaking and an outstanding proof that poultry-farming can be made a very profitable occupation.

Our front cover shows a delightful photograph of the staff.

There are few farms on which such a thorough and practical training is given to the pupils.

I want to emphasise this point. Every phase of poultry-keeping is taught—Pedigree-breeding, the Commercial Side, Table Poultry, etc., and what is of immense importance, both the practical and theoretical side are taught in such a manner that the pupils take the keenest interest in the work.

Many of those who have graduated at Wellingham are now either running successfully poultry farms of their own or holding important positions on other farms.

FUMIGATION OF INCUBATORS.

Many of our readers have written asking me how to fumigate their incubators. The following is the method :—

> Fumigation of incubators with formaldehyde between hatches is advised, especially if an outbreak of Bacillary White Diarrhoea is suspected. This method of disinfection is trustworthy when the air temperature is 65 degrees fahrenheit, or over, and the atmosphere is humid. The incubator should accordingly be placed in a warm room. It should be well moistened inside, and a little water left in the bottom. Every exit from the chamber should be pasted over with paper, and, before finally closing, a metal vessel should be inserted containing permanganate of potash crystals, over which double the quantity of commercial formalin is poured. This incubator should then be finally sealed up, and not opened for three or four hours. Two ounces of formalin and one of potassium permanganate are sufficient for every five cubic feet. The same procedure may be adopted with brooders, which are, however, more troublesome to make airtight. Another method is to thoroughly swab or spray out incubators and brooders with methylated spirit.

The Willows, Haydock.

Dear Sir,—I take "Eggs" weekly from my local newsagent, and out of the six papers I take it is the only one I can take and read from beginning to end.

Yours sincerely,
(Signed) A. PIMBLETT.

Utility Duck Club Notes.

By **HUGH B. CARRINGTON.**

January, 1925.

The subject of my notes this month may, perhaps, sound a little curious—it is "too great expectations." I will endeavour to try and explain myself. Many people having heard of the wonderful performances put up by ducks, expect all ducks to do likewise. It is very fortunate, indeed, that they do not, for a country stocked with nothing but ducks putting up 300-egg records and over, would, in a couple of years' time or less, be stocked with nothing but diseased, profitless birds unfit for breeding from, unfit for egg production, unfit for anything perhaps, except immediate slaughter and burial, for which they would unquestionably be entirely suitable.

Yes! Too great expectations. Duck-keepers, particularly beginners, are disappointed when their birds go into a winter moult, but have they stopped to consider the matter a little further before blaming their birds?

There are two kinds of moult—the natural and the unnatural; if the latter then there really is cause for disappointment, though this variety is usually the result of bad management, or, shall we say, bad luck, and the birds cannot be blamed.

There is no space to deal with the whole subject here, but to those who are more deeply interested I would suggest that they read the U.D.C. 1924 Year Book, which, among other instructive articles, contains one by Capt. G. C. Heseltine, entitled, "The Vicarious Moult." This Year Book may be obtained from me for 1/6, post free. What I have to say will be on the natural moult only. My theories may not be original, scientific or correct, but are given for what they are worth, as the result of observation among my own flocks.

Everyone is familiar with the pullet moult in chickens, but most people seem to think that ducks ought to be immune from it on the theory that once a duck starts laying it has no right ever to stop. On the contrary, the very fact that it has laid heavily is sufficient to account for the moult.

Let me try to make my meaning clear. Ducks hatched any time from the end of March to the end of April will by the end of November have laid perhaps 60-80 eggs, which means that they must have begun to lay at the early age of about five months, long before full maturity has been reached. The process of laying these 60-80 eggs is naturally very exhausting. It means a heavy drain on the body fat and a consequent drying up at the root of the feathers, leading to the desire to cast them. When a certain point is reached a moult starts, and unless the bird is to go about naked and unashamed, and incidentally cold, the absolute necessity of growing some more clothes makes itself felt. With very few exceptions, growing more clothes and producing eggs at the same time is an impossible feat, and, consequently, the bird stops laying. Nature has stepped in and prevented over production, and the ultimate collapse of the bird.

Therefore, I would counsel duck-keepers to stop and enquire what the birds have already done before they condemn them as no use. If they have done nothing worth mentioning, then either they are bad birds, or else the moult is unnatural, and should not have taken place.

If, however, they have laid a considerable number of eggs, and then moulted, the fact should be rejoiced over, rather than the reverse, for it is practically certain that the good layer before the pullet moult will be a good one afterwards.

The exceptional bird has been mentioned which either does not moult at all as a pullet, or lays through the moult. Of such birds there are very few that will make good stock birds. The strain of continual production is too great, and either the bird itself will be ruined in health or the eggs produced will be poor in shape and size. The exception of the exceptions will be a truly magnificent bird, for it will mean that she is possessed of quite abnormal vigour which will make of her the most valuable breeder it is possible to possess.

In future notes I hope to deal with the question of hatching, with the idea of obtaining batches of birds to come into lay in succession, or, better still, perhaps it may be possible to persuade an experienced breeder who has experimented in this direction to write more fully than is possible in these notes on the subject, and distribute the information in the form of a leaflet to U.D.C. members.

Talking of leaflets, I should like to mention here that before long members will receive a leaflet on the selection of broody hens—it is a mistake to think that any old broody will do, as this leaflet clearly points out. Non-members will, of course, be able to purchase this leaflet, but I hope anyone contemplating doing so will join the club instead, and get this one and others, which will be issued for nothing.

LEICESTERSHIRE COUNTY COUNCIL.

COUNTY LAYING TRIALS.

Mr. Percy A. Francis, M.B.E., Poultry Commissioner, Ministry of Agriculture and Fisheries, has kindly consented to present the cups and other awards to the successful competitors in the above competition, which concluded on September 14th. Mr. Francis will also give an address on the "History and Value of Laying Trials."

The distribution will take place at the County Rooms, Hotel Street, Leicester, on Wednesday, January 7th, 1925, at 7.0 p.m. Mr. V. R. Pochin, Vice-Chairman, Leicestershire County Council, will preside.

All interested in Poultry Keeping are invited to be present.

Any further information may be obtained from:—

H. T. ATKINSON,
County Instructor in Poultry Keeping.

THERE ARE—

Twenty-one articles on all subjects pertaining to poultry-keeping in the Tenth Annual Register of the S.P.B.A., which has just been issued. All these articles are written by practical experts, who have won success on their own.

The Annual Subscription to the S.P.B.A. is 5s., and includes a copy of this wonderful book, which is admirably illustrated, and contains a wealth of information additional to the articles mentioned.

This is but one of the many benefits derived from membership of the S.P.B.A.

The National Egg Laying Test.

The Final Report of the Pullet Test for the forty-eight weeks, ending 1st October, 1924, is to hand.

Entries reach a record total of 2,080 pullets, in addition to 482 ducks. This is a world's record, and is a striking testimony to the great interest taken in these competitions. When the Society held their first test twenty-seven years ago they had great difficulty in getting twenty-eight birds to compete.

The report states it is especially satisfactory that, notwithstanding this large figure, the average egg production of the pullets shows an advance on previous tests, the average for the whole flock being 176.14 eggs per bird. One might say a striking refutation of the "Daily Mail" statement that our pure breeds are less productive. That such a statement should be allowed to go unchallenged except in these columns is incomprehensible. Possibly our pedigree breeders, realising its sources, do not attach importance to it. We appreciate that, but it should be remembered that the statement is made to a large public, who are almost wholly ignorant of poultry matters.

A satisfactory feature in the test has been the comparatively low death rate—only a fraction above 5 per cent.—in face of outbreaks of both avian diphtheria and fowl pox, within a week of the arrival of the birds. It states that as a whole of the ninety-six serious cases only four proved fatal.

It is pleasing to note that as regard breed type there was a noticeable advance, as compared with that of previous years. It is suggested that this improvement in type was, to a great extent, due to the offering by the Breed Clubs and Mr. O. F. Bates, of special prizes open only to pens passed in to the test as reasonably conforming to the standard fixed for the breed they represented.

White Leghorns were the most popular breeds, being represented by 713 birds. They are described as "somwhat uneven," as although a large proportion were of large type, well-grown, and in good laying condition, others, although very forward (many actually in lay) were far too thin and poor in condition to put up records during the winter months. The majority of them stopped after the first cold snap, and then fell into a moult, and remained unproductive during the winter months. What we have so often emphasised in these columns is here remarked. The report says: "A goodly covering of flesh is essential to a satisfactory output of eggs during the winter period."

Performance of the White Leghorns in the matter of egg production is very uneven. The chief fault of the breed is stated to be a falling off in the size of egg, and it was noted that the production of small eggs was largely confined to birds lacking in size for the breed. What we have often said in these columns is demonstrated here, that a precocious pullet never reaches her full production; as a breeder she is a failure, as she transmits her precocity to her pullets, and thus we get the small egg.

These criticisms apply not only to the White Leghorns, but more or less to all breeds alike.

It is pleasing to note the report states that the White Wyandottes show a marked improvement, both in size and type. The average production per bird was higher than that of the White Leghorns. The growing popularity of the Black Leghorn is mentioned. R.I. Reds and Light Sussex were well represented, but a note is made that the pens were variable, both in type and performance.

It is sad to note that Mr. Leigh finds it necessary to remark on the decrease in the size and colour of the egg of the R.I. Red.

Croad Langshans and Blue Orpingtons are worthy of special mention, and so also are the two pens of Cuckoo Leghorns.

In the Championship Section, which is confined to winners in previous tests, the average was 185.29 eggs per bird, as against a general flock average of 176.14.

Broodiness was more prevalent than in previous tests, but was confined largely to certain strains of the various breeds. Mr. Leigh remarks that there appears to be an increase in the White Leghorn, a point which we can confirm by the many letters we receive on the subject.

Feeding was briefly as follows:—Grain fed in the litter in the early morning, usually consisting of equal parts wheat, oats and maize, the latter being kibbled very finely. In warm weather the maize was reduced by one-half, or omitted entirely. The quantity of grain fed was 1½ozs. to 2ozs. per bird daily. Wet mash fed in the early afternoon, made up as follows:—

Middlings: 45 to 55 per cent.
Bran: 15 to 25 per cent.
Maize Meal or Maize Germ Meal: 10 per cent.
Sussex Ground Oats: 20 per cent.
Fish Meal: 5 to 8 per cent.

Sometimes, by way of a change, 4 to 5 per cent. of Malt Culms was added.

In addition, dry mash was given late in the afternoon that the same mixture of meals as used for wet mash. Green vegetables were fed liberally.

The highest award in the Championship section of ten pullets was won by Miss M. Fowler, with Mr. Warwick Rogers second, and Mr W. M. Golden third.

Section 2, White Leghorns, Mr. F. R. Welch won, Capt. Gonne second, and Mrs. E. M. L. Knight third.

Black Leghorns. The first three places were taken by Mr. I. Margerison, Messrs. Venn Carr, Ltd., and Messrs. J. and A. Moore.

Non-Sitting Breeds, five pullets. R. C. Hall won with Cuckoo Leghorns, J. H. Thompson second with Anconas, and Mr. C. Legg third again with Cuckoo Leghorns. White and Black Leghorns were not included in this section.

Mr. R. Rodwell was first with White Wyandottes, followed by Mr. R. Sewell, and Mr. E. H. Sikes third.

In R.I. Reds the first place was taken by Messrs. W and T. Salt, second by Mr. A. H .Capper, and third by G W. Reeves.

In the Sussex Mr. F. Rossall-Sandford was first, W. Bradbury second, and M. W. Slades third.

In Section 8, which comprised sitting breeds other than those mentioned, Mr. H. R. Parsons won with Australorps, Mr. Gee-Kemp second, and F. R. Welch third, respectively with Buff Rocks.

"DAILY MAIL" EGG-LAYING TEST OF FIRST-CROSS PULLETS, 1924-25.

Report for First Month—18th Oct. to 14th Nov., 1924.

On the arrival of the competing pens the two most striking features noted were the general good health of all the birds, and the remarkable and unexpected uniformity in the markings and type of most of the crosses. So beautiful are some of these that there is little doubt more will be heard of them in the near future, as it is more than probable efforts will be made by breeders to fix the characters of the most attractive of them. It so happens these are mainly amongst the sex-linked crosses, which will make it all the more difficult and interesting to so fix the desirable characteristics as to make them breed true to type.

Before being placed in their pens all the birds were examined by Professor R. C. Punnett, who had the right to refuse any pens entered for the sex-linked section which did not come within that category, and also by Captain Harold Leeney, M.R.C.V.S., for health, but none were rejected.

While many of the pens consisted of well-matured birds, the proportion actually laying on arrival was small, and by far the large proportion were backward, and not a few were very immature, and little more than chickens. This no doubt was due to the somewhat late announcement of the Test, and the exceptionally wet and sunless season which has retarded the normal maturing of all birds.

The birds in lay have, however, made a fairly good start for the first month with a total of 4,704 eggs—an average of 6.65 eggs per bird. The daily collections increased steadily throughout the month—rising from the lowest point of 113 eggs on the 3rd day to the highest reached during the month—namely, 235 eggs on the 26th day.

The average size of the eggs was satisfactory, and the proportion of first grade eggs—the only ones taken into account for competitive purposes—was 75.60 per cent. In Section 1 the highest scoring pen was a White Wyandotte x White Leghorn, with a record of 100 eggs (6 second grade), owned by H. Sutton & Sons.

In all 12 pens had not made a start at the close of the month, and several of these are so backward that they cannot be expected to begin production for another month.

The general health of the birds has been very good throughout, with a remarkable freedom from those seasonal colds which have been so prevalent this year.

They are all in excellent condition, and their general appearance, and particularly their tightness of feather, have been much commented on by visitors to the Test.

EGG PRODUCTION OF LEADING PENS.

(Seven Pullets.)

Figures are eggs and points respectively:—

Section 1.—White Leghorns x White Wyandottes.—Sutton & Sons, H., 100, 94; Crabtree, Walter, 81, 79; Smith, Sydney, 83, 76; Hargreaves, G. H., 73, 73; Barley, F. W., 78, 72.

Section 2.—Black Leghorns x Rhode Island Reds.—Berry, P. K., 107, 95; Robinson, M. E. & A., 103, 92; Edmonds, James, 96, 86; Metcalfe, G. B., 64, 63; Ashworth, J., 58, 56.

Section 3.—Any Other First Cross.—Barley, H. D., 128, 122; Crabtree, Mrs. W., 99, 93; Martin, Frank, 106, 88; Crabtree, Walter, 76, 68; Bradbury, Walter, 68, 61.

Section 4.—Any Cross showing Sex-linked Inheritance.—White, P. E., 87, 82; Hall, R. Charles, 79, 78; Sowerby, Hugh, 87, 76; Thorpe, E. J. and Correll, C. E., 96, 68; Mansell, A., 52, 48.

YORKSHIRE FEDERATION OF POULTRY SOCIETIES.

INTERNATIONAL LAYING TEST, 1924-25.

Held on the Test Ground at Otley, Yorks.

Report for the Second Month—15th Nov. to 12th Dec., 1924.

The Manager reports that the conclusion of the second month finds a rapid increase in the number of eggs laid, and also in the size of egg. There are quite a number of birds still in the moult, some of them having laid a few eggs on arrival, and then commenced a neck, and in a few instances, a full moult. There have been two deaths, Nos. 154 and 274; the Leeds University P.M. Report being that the former died from a ruptured ovary and broken yolk, and the latter from congestion and an internal cyst. Seven cases of roup have occurred during the month, all from one house, but they are responding to treatment, and there does not seem to be any fear of an epidemic. Practically all the birds that were isolated last month are now in lay.

Competitors are requested to note that it is not possible to make the corrections necessary through the substitution of a reserve bird's record for that of a dead bird, during the current month, but they will be made in the following report.

The weather has been bad, rain with cold east winds on nearly every day of the first three weeks, and a good deal of fog. Considering the amount of rain, the state of the land and herbage is very good.

The leading pens are as follows. Figures are eggs and points respectively.

Class A.—Section 1.—Mrs. Clay, Long Preston, 214, 209; R. H. Fryers, Bradley, Keighley, 198, 191; Mr. and Mrs. Wade, Bishop Thornton, 197, 189.

Class A.—Section 2.—W. Sharp, Bell Busk, Leeds, 163, 171; A. White, Malpas, Cheshire, 156, 159; R. Rodwell, Nelson, 159, 157.

Class A.—Section 4.—Dr. J. E. Helm, Newchurch, Lancs., 220, 213; Mrs. Clay, Long Preston, 183, 193; R. & A. Johnson, Chalford, Gloucester, 162, 165.

Class A.—Section 5.—Sutton & Son, Little Hoole, Preston, 143, 159; M. A. Hindmarsh, Skelton, York, 149, 150; Mrs. J. Shaw, Otley, 141, 136.

Class A.—Section 6.—Davey & Son, Sutton, Keighley, 154, 162; Wright & Fortune, Keighley, 114, 115; F. R. Welch, Bewdley, Worcester, 89, 85.

Class C.—Section 9.—A.V. Light Breed (Single Bird Section).—Wm. Wharton, Keighley (W.L.), 43, 42; Hugh Kershaw, Keighley (W.L.), 40, 42; R. & A. Johnson, Chalford, Gloucester (W.L.), 40, 40.

Class C.—Section 10.—A.V. Heavy Breed (Single Bird Section).—Alf. Sawyer, Crosshills, Keighley (R.I.R.), 43, 43; M. E. & A. Robinson, Bawtry (R.I.R.), 42, 44; J. Brown, Glusburn, Keighley (Lt. Sx.), 42, 42.

EGG-LAYING TEST.

GLOUCESTERSHIRE REPORT.

For **Month Ended December 5th.**

During the month, the early part of which was exceptionally wet, 3,547 eggs have been collected against 2,489 the previous month, giving a total of 6,036 eggs for the two months, and a pullet average of 18.9. The majority of the pullets which moulted on arrival have now commenced to lay, and the size of the eggs as a whole is satisfactory, particularly in the case of the heavy breeds. The general health of the birds is good.

The method of scoring for the month under review is: Grade A, 1 15-16 oz. or over to score 5 points; Grade B, 1 11-16th oz., but under 1 15-16th oz. to score 4 points; Grade C eggs are recorded, but no points awarded.

Section A. (1).—White Wyandotte (Professional). (Five birds constitute a Pen).—P. M. Hinton, 659 pts.; F. W. Clifford, 623 pts.; H. T. Godber, 523 pts.; H. W. Fowles, 500 pts.; J. E. Boyd, 489 pts.; H. Ludlow Hewitt, 410 pts.

Section A. (2).—A.O.V. Heavy Breed (Professional).—W. R. Partridge (R.I.R.), 886 pts.; G. H. H. Simmons (L.S.), 842 pts.; Miss M. Lawrence (R.I.R.), 775 pts.; M. C. Beale (R.I.R.), 675 pts.; J. G. Herbert (R.I.R.), 653 pts.; C. G. Young (R.I.R.), 550 pts.

Section A. (3).—A.V. Light Breed (Professional).—F. A. Welch, 778 pts.; Sherborne P.F., 581 pts.; Miss M. R. Jenkins, 519 pts.; Miss H. Baylis, 517 pts.; Cotswold Ped. Farm, 489 pts.; Miss N. Townsend, 451 pts.

Section B (1).—A.V. Heavy Breed. (Confined to owners of not more than 50 laying head).—Maisemore School (W.W.), 902 pts.; A. W. Moses (L.S.), 901 pts.; Miss M. Brown (W.W.), 579 pts.; L Grist (W.W.), 470 pts.; R. T. Miles (B'Veld), 95 pts.

Section B. (2).—A.V. Light Breed. (Confined to owners of not more than 50 laying head).—C. E. Skirten ,652 pts.; Miss M. Brown, 840 pts.; L. Grist, 380 pts.; J. D. Crewdson, 244 pts. All White Leghorns.

Pen Duck Section. (Four ducks constitute a pen).—G. H. H. Simmons (K.C.), 116 pts.; Miss N. Townsend (K.C.), 72 pts.; W. R. Partridge (W.R.), 67 pts.; Miss M. Lawrence (K.C.), 38 pts.; S. J. Phillips (K.C.), 38 pts.; Major J. G. Dugdale (K.C.), 27 pts.

Single Pen Section. Section 1.—White Leghorns.—Miss N. Townsend (5), 195 pts.; Miss R. E. L. Shearn, 195 pts.; L. Grist (13), 195 pts.; L. Grist (6), 190 pts.; G. H. H. Simmons, 183 pts.; Miss K. Feaviour, 171 pts.

Section 2.—White Wyandotte.—Lord Sherborne (37), 230 pts.; Philip Clapham (36), 220 pts.; W. R. Partridge (34), 220 pts.; H. W. Fowles, 220 pts.; G. H. H. Simmons (31), 220 pts.; W. R. Partridge (38), 209 pts.

Section 3.—Rhode Island Red.—G. B. Metcalfe, 190 pts.; Miss M. Lawrence (59), 180 pts.; S. Barnes, junr. (48), 115 pts.; Miss M. Lawrence (42), 115 pts.; S. Barnes, junr. (45), 70 pts.; A. Daunton, 60 pts.

Section 4.—A.O.V. Light Breed.—Churchdown Ped. P.F. (Ancona), 197 pts.; G. B. Young (B.L.), 60 points; H. W. Stephens (B.L.), 29 pts.; Miss K. Feaviour (B.L.), 24 pts.; Churchdown Ped. P.F. (B.L.), 5 pts.

Section 5.—A.O.V. Heavy Breed.—Mrs. E. Weinholt (Aus. Orp.), 224 pts.; Miss M. Lawrence (B. Rock), 203 pts.; Lady Bledisloe (Aus. Orp.), 193 pts.; G. H. H. Simmons (B. Rock), 189 pts.; Miss M. Johnson (L.S.), 125 pts.; R. T. Miles (B'veld), 110 pts.

Section 6.—Ducks.—Mrs. H. L. Hanks (K.C.), 52 pts.; Mrs. E. Weinholt (K.C.), 43 pts.; Major J. G. Dugdale (K.C.), 41 pts.; H. W. Fowles (K.C.), 40 pts.; F. W Walters (6), (W.R.), 38 pts;. F. L. Walters (7) (W.R.), 36 points.

THE CHESHIRE COUNTY COUNCIL EGG-LAYING COMPETITION.

SINGLE BIRD TEST.

Report for the First Month—Oct. 15th-Nov. 12th, 1924.

There have been no deaths in either heavy breeds or light breed flocks. The health of the stock is excellent.

SUMMARY OF LEADING PENS.

Light Breeds (All W. Leghorns).—J. Mason, 227 pts.; Mrs. Ball, 216 pts.; Taney Bros., 208 pts.; E. Harrison, 176 pts.; A. Tobler, 174 pts.: Tansey Bros,, 170 pts.

Heavy Breeds—T. Mosley (S. Fav.), 220 pts.; E. Patterson (B. Orp.), 218 pts.; Mrs. Garnett (Buff Rock), 198 pts.; W. Evans (W.W.), 175 pts.; Tansey Bros. (R.I.R.), 171 pts.; W. Evans (Buff Rock), 169 pts.

ANSWERS TO QUERIES—Continued.

W. H. N. (Annesborough) replies thanking us for our reply in "Eggs," and telling me that we shall be glad to know that he has now actually an average of 27 eggs daily from 48 birds, which is a very remarkable improvement. He asks how it is possible to know Wyandotte pullets from cockerels as day-olds. That is not possible, and then he wants to know at what age we can distinguish the sex, and how? In whatever I tell him he will experience some difficulty, because one learns to do this, without looking for any particular characteristic, from the general make-up of the bird. However, as a rule, you will find that the cockerels will be more yellow and thicker on the legs than the pullets, will be higher on the leg, will not feather so quickly, comb will be pink, and the wattles develop earlier, and more particularly the ear lobes. As a rule the cockerels do not feather so quickly down the back as pullets. The day-old pullet chicks advertised in "Eggs" are a cross from sex-linked birds. In reply to his question as to what is the correct temperature for a brooder box hover. He would be wise not to rely upon temperatures entirely, but to observe the chicks. If they huddle together and cheep, they require more warmth. If, on the contrary, they spread out, then they are too hot. I should begin the first three days at a temperature of from 85 to 90, and then gradually reduce it.

G. C. (Milnsbridge) sends a sample of bran, which is above the average in quality, sharps which are inferior containing too much bran; Indian meal rather coarsely ground, and dear at 14s. a cwt.; ground oats, which are alleged to "Sussex" ground, but are not, and are dear at 20s. cwt. Fish meal at 22s., which appears to be a very good sample, but he should get a guarantee that the salt content does not exceed 4 per cent. He also asks if it is possible to mate White Leghorns to give sex-linked offspring. I am afraid that is an impossibility. The only suggestion that I can make, if he would like to try it, is to mate a White Bresse cockerel. This would give blue or black-legged pullets and yellow-legged cockerels, but he must understand that I am not definite on this point. The white of the Leghorn inhibits other colours, and, therefore, he will not get sex-linkage through the plumage. In answer to his question. He would be quite right in mating the two-year-old cockerel with his pen of two-year-old hens. We are very glad to have his enthusiastic appreciation of "Eggs." To have had more eggs in one day in November than he had from the same number of birds in a month last year, through following the advice given in these columns, is surely a testimony of its value.

Cumbrian (Carlisle) complains that he had a very high percentage of infertile eggs last year, and proposes to "dub" his cockerels. He wishes to know how it should be done. The operation is not difficult, Cumbrian, neither is it cruel. Get someone to hold the bird for you, then take the comb firmly in your hand, and, with a sharp knife, cut from the base forward to the beak, as close to the head as possible. You can stop the bleeding by pouring plenty of cold water on the head. It is advisable to isolate the bird until the wound has entirely healed.

A. M. B. (Denholme) asks the difference between thirds, sharps, middlings, and offals, and that they should be placed in their order of value. The offals are the remainder of the wheat berry after the flour has been extracted. Thirds and middlings are practically the same; middlings may vary from a low-grade flour to almost a fine bran, but in reality they are next to the flour, and should not contain a lot of bran. Sharps contain more bran than middlings, and come between the actual bran and the middlings. He enclosed a sample of thirds which are, in reality, sharps, containing a high percentage of bran. They are really hardly good enough to feed, and if used, a much lower percentage of bran should be used than given in the formula. He requires us to give a wet mash to Buff Rocks on heavy clay soil 900 feet above sea level, as a laying mash. I would recommend to him:—Five parts thirds, one biscuit meal, one maize meal, and one fish meal or meat and bone meal. These parts are all by weight. If he likes to vary this he could use S.G.O. in place of the biscuit meal. In reply to his further question, the breeder whose name he mentions, is quite reliable.

LONDON MARKET ADVICE TABLE.—JANUARY, 1925.

By A. V. CLARKSON.

TURKEYS.—It is not out of place to mention here the result of the Xmas turkey trade on the London Market.

As anticipated, the bulk of the buyers refrained from buying until the last possible moment, which caused prices to drop to a fair level, although the figure was lower than last year.

The one remarkable outstanding fact was the enormous quantity of small turkeys, ranging from 12 lbs. down to 7 and 8 lbs., both from England and abroad. Even so the small English turkeys realised 3d. or 4d. per lb. more than foreign birds of the same size, but the prices realised on this class of bird could hardly have paid the sender.

With regard to the large birds, there was a constant demand for English turkeys over 18 lbs., and the prices realised for these were very good in comparison with the prices realised for foreign turkeys. The moral of all this is that members should take to heart the fact that a large English turkey if properly fed and prepared will do well on the London Market, but his smaller birds he should endeavour to dispose of locally, because the foreign competition against the small-sized bird destroys the chance of doing well.

There is still a demand for a few fresh turkeys if of good quality.

CHICKENS.—Good chicken are very scarce on the London Market at present.

There seems to be a very fair supply of birds about 7 or 8 months old, but I must warn senders that the buyers on the London Market do not like a bird which they describe as "forward." These are the birds which have thrown their spurs, and no amount of persuasion will cause a buyer to give anything but a bad price for this class of bird.

Of course, at the time of writing, there is no enquiry for the young birds, but it will pay members to communicate with the market towards the end of the month, in order that they may be ready to jump in with their produce at the first opportunity, whether it be Poussin or Spring Chicken.

HENS.—Naturally at this time there is a shortage of hens, because the bulk of them are laying. As a consequence there is a steady demand for birds alive providing they are fat. This opens up an opportunity to those who have birds which are either not laying or not fit for keeping.

EGGS.—During the last month a tremendous quantity of eggs has been arriving on the London Market, and it is surprising to see the proportion of these eggs which are dirty. I really must impress upon senders the necessity of using every endeavour on their farm to ensure the eggs not being soiled. If the individual could only hear the buyers' remarks when inspecting clean and dirty consignments, he would never send dirty eggs again.

Eggs packed in the orthodox egg boxes meet a ready demand, but these packed in dirty boxes or covered in chaff and hay never realise quite so much.

I would like to take this opportunity to inform S.P.B.A. members that it is to their own advantage to put their names inside the lid of their egg box, because a salesman receiving large quantities of eggs packed in similar boxes is apt to get them mixed up.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

APPLICATIONS FOR MEMBERSHIP.

Venis, E., Vale Hurst, Saxon Road, Hastings.
Walley, Mr. & Mrs. T. S. D., Tregarthen, Hornchurch.
Millington, B., Ardley, Bicester, Oxon.
Green, J. S., "Shirdley," Shirdley Hill, near Ormskirk.
Conquest, H. T., Orchard Cottage, Sparry, Conharrach, Scorrier, Cornwall.
Taylor, Chris. S., Ascott, Stadhampton, Wallingford.
Galletty, John, Blackwood Street, Barrhead, Renfrewshire, Scotland.
Walker, S. W., Dog Sanatorium and P. Farm, South Gosforth.
Sager, W., Broxup House Farm, Winney Lane, Euxton, near Chorley.
Gibbons, E., Higher Cockham Farm, Helmshore, near Manchester.
Townend, T. E., Woodlands, Townville, Castleford, Yorks.
Hutchinson, D., Burton Mere, Burton Bradstock, Bridport, Dorset.
Davison, S., 1, Railway Terrace, Garforth, near Leeds.
Hart, W. L., Quilter's Farm, East Hanningfields, near Chelmsford, Essex.
Keeley, J., c/o Miss Francis, High Cross, Rotherfield, Tunbridge Wells.
Capper, G. A., 21, Heath Street, Goldenhill, Stoke-on-Trent, Staffs.
Gregg, Mrs., 50, St. Stephen's Green, Dublin.
Richardson, Arthur, 218, Widdington Road, Coventry, Warwickshire.
Steward, Barry, Farm Hill, Castledawson, Co. Derry, N. Ireland.
Bell, Miss K. H., Brocklesby, Chandlersford, Hants.
Caven, W. L., High Park Egg Farm, Cranleigh, Surrey.
Norbury, D., Woodbury, near Exeter.
Dooly, Thos. H., Boyne Lodge, Formby, Lancs.
Bowerman, P. Hingeston, Clay Hill, Ringmer, near Lewes, Sussex.
Downes, D., 47, Turnhurst Road, Packmoor, near Tunstall, Staffs.
Campbell, A. C., Flax, Corn & Saw Mills, Dunamanagh, Co. Tyrone.
Platt, A., Hill Barn P. Farm, Dobcross, Yorks.
Bell, G. W. E., Wayford, Stalham, Norfolk.
Coenraets, Paul, Elevage due Paavillon de Rosieres, Rixensart, France.
Wilson, Mrs. H., Love's, Ramsbury, Wilts.
Crosse, Miss, c/o S. Butterworth, Esq., Landermere Road, Thorpe le Soken, Essex.
Shepherd, Wm., Campfield House, Glassel, Aberdeenshire.
Wilbraham, Miss A. L., Little Barrington, Burford, Oxon.
Edwards, Thos., 8, Rose Cottages, Barony, Nantwich, Cheshire.
Bett, Mrs. C., Springfield, Benniworth, Lincoln.
Jackson, Capt. A., "Pathside" Egg Farm, Cranleigh.
Friedlein, J., White House Farm, North Fambridge, via Chelmsford, Essex.
Clarke, R. A., The Ryton P. Farm, The Bungalow, Ryton-on-Dunsmore, near Coventry.
Ellis, E. S. Williams, Woodington P. Farm, Romsey, Hants.
Evans, Fairfax, Nethergate Farm, Nafferton, Yorks.

KEIGHLEY AND DISTRICT BRANCH.

An Egg Show will be held in the Temperance Hall, Keighley, on Wednesday, January 14th, 1925. Entries are invited for seven classes.

A.—Hatching Eggs. Class 1: Six White Eggs. Class 2: Six Tinted Eggs. Class 3: Six Brown Eggs.

B. Commercial Eggs.—Class 4: Six White Eggs. Class 5: Six Tinted Eggs. Class 6: Six Brown Eggs. Class 7: Six Duck Eggs, Hatching or Commercial.

No entry fees. Awards will be made and particulars communicated to local press. Mr. E. Croft, Hessay, York, will judge. After awards have been made, eggs will be sold, and the proceeds will go to the funds of the society. In this way it is hoped to realise a substantial sum to help clear off the debit incurred by he annual show. The hearty co-operation of all members is nvited.

Prizes offered are:—A. Sitting of White Leghorn Eggs, given by Mr. Croft, for best exhibit in Classes 1, 2 and 3. B. Sitting f White Wyandotte Eggs, given by Mr. Croft, for best exhibit n Classes 4, 5, and 6. C. Sitting of Aylesbury Duck Eggs, given by Mrs. Wilson, for best exhibit in Class 7. Packages of ggs should be addressed to the Secretary, Mrs. Wilson, Temerance Hall, Keighley, and should be delivered not later than .30 p.m., when judging will commence. After the sale of the ggs Mr. Croft will give a lecture. His subject will be "From hell to Maturity."

Sittings of eggs offered will be delivered in March or April, 925.

YORKSHIRE FEDERATION INTERNATIONAL LAYING TEST. HELD AT OTLEY, YORKS.

Positions (first ten) for specials offered to members of Keighy and District Branch of the Scientific Poultry Breeders' Assoiation in the single bird sections at end of second period of four eeks, December 12th, 1924:—

Light Breeds.—1, Wm. Wharton, Keighley (W.L.), points gained 42¼; 2, H. Kershaw, Keighley (W.L.), 42; 3, S. Preston, Haworth (W.L.), 39; 4, S. Hartley, Haworth (W.L.), 36 1-3; 5, J. Paget, Keighley (W.L.), 35; 6, J. Fisher, Cowling (B.L.), 32¼; 7, H. Kershaw, Keighey (W.L.), 32½; 8, Wm. Wharton, Keighley (W.L.), 25¾; 9, Wright and Fortune, Keighley (Ex.L.), 23¼; 10, Davey and Son, Sutton (Blk. L.), 21¾.

Heavy Breeds.—1, Alf Sawyer, Crosshills (R.I.R.), points gained 48; 2, J. Brown, Glusburn (R.I.R.), 42¾; 3, Mrs. Hawkesworth, Pool (W.W.), 42; 4, Wright and Fortune, Keighley (W.W.), 39½; 5, H. Downsbrough, Bradshaw (W.W.), 37¾; 6, F. Slee, Keighley (Bf.R), 34½; 7, H. Downsbrough, Bradshaw (W.W.), 34¼; 8, C. Macaulay, Keighley (R.I.R.), 33½; 9, Miss B. Taylor, Cullingworth (W.W.), 30; 10, J. H. and W. Brayshaw, Keighley (W.W.), 29½.

POST-MORTEMS—Continued.

A. B. F. I could find no lesions of disease in the chick, so must conclude that the scouring was due to digestive disorder only. In case of trouble with very young chicks, where a number of deaths occur, it is much better to send three or four for examination than a single specimen. In some very acute infectious diseases, B.W.D. especially, chicks often die without any symptoms during life, and present no lesions after death, but generally when several bodies are examined, one or many will give some clue as to the cause of the mortality.

P. D. H-J. Double pneumonia was the cause in the case of the one chick you sent for examination. With the exception of the lungs all the other organs were normal. This type of pneumonia arises from several contributory conditions—chill, bad air (imperfect ventilation of brooder, overcrowding, fumes from heating unit). I enclose a reprint of an article published in "Eggs" last year, which I hope will be helpful to you. I am sorry you only sent one cadaver, as in the case of small chicks they often die without showing any very definite post-mortem lesions, and it may be just that one that is sent, in which case much valuable time may be lost if the cause of the mortality is an infectious disease.

D. The post-mortem examination of the Canadian wild duck showed the cause to be a clot of blood on the brain, but I could not say if this was due to an injury (which is most likely), or to the giving way of a blood vessel, due to a sudden increase of blood pressure, i.e., apoplexy. The rest of the internal organs were quite normal, and the bird was in good condition.

A. D. T. The cause in the case of the White Leghorn two-year-old hen was pericarditis (inflammation of the heart sac), due to the presence of a bladder worm, which is the intermediate stage of a tape-worm of some other animal. Birds pick up the eggs from contaminated ground, water or food; the eggs develop into bladder worms which invade various organs, and if the bird is eaten raw by the animal, the latter becomes infested with a tape worm. It is evident that there is some animal affected with tape worms that has infected your premises, and that would account for the number of victims. I should advise an examination of any dogs you may have, and the treatment of them for tape worms if found to be infested

J. E. C. The post-mortem examination of the Light Sussex pullet showed the cause to be apoplexy, there being a very considerable clot of blood at the base of the brain. The body cavity was crowded with large masses of fat, which points to the plethoric condition favourable to apoplectic seizures. Any excitement would be liable to cause a sudden rise of blood pressure, which if the blood vessels were unable to withstand it, would cause apoplexy.

B. S. Diphtheritic roup was the cause in the case of the pullet examined, post-mortem, the immediate cause of death being suffocation from the blocking up of the larynx by diphtheritic deposits. This is an infectious disease, and very great care will be necessary to prevent serious losses. If you will catch and examine the birds you will most likely find that a number of them will have yellowish white patches in the mouths or around the entrance to the wind-pipe. Any bird so affected should be immediately isolated and kept with others similarly diseased. Scrape off the patches with a sharp spoon, and paint the raw surfaces that are left with tincture of iodine. If deposits are seen blocking the wind-pipe remove with fine forceps to prevent choking. Give the whole flock water to drink that has had dissolved in it one dram of sulphate of copper in every gallon, and

(Continued at Foot of Column on Next Page).

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, JANUARY 2nd, 1925.

GRAIN AND FEEDING STUFFS.—English wheat is in rather small supply, and, with a fair enquiry, prices are firmer, the average price now being 13s. per cwt., against 12s. 9d. last week and 12s. 6d. a fortnight ago. An improved trade is also experienced for imported descriptions. Barley meets a steady trade, and prices are not much altered on the week. Oats incline to be dearer. The market is very firm for maize, and Argentine averages 11s. 1d. per cwt., or an advance of 3d. per cwt. on the week.

Trade for milling offals is rather more active and middlings are dearer, while bran and imported pollards sell at fully late rates at most centres. Meals are in firm request at hardening prices, especially for maize meal. Prices for oil cakes are very firm, although only a moderate trade passes.

MILLERS' OFFALS.—Bran (British): Bristol, £9 2s; Hull, £8 12s; Liverpool, £9; London, £8 10s. Broad Bran: Hull, £10 2s; London, £9 15s. Middlings—Fine (Imported): London, £11; Coarse (British): Bristol, £10 12s; Hull, £10 10s; Liverpool, £9 10s: London, £9 17s. Pollards (Imported). Bristol, £9; Hull, £8 7s; Liverpool, £8 5s; London, £8 15s. Rice Bran: Bristol, £9 10s; Liverpool, £8 15s. MEAL.—Barley Meal: Bristol, £13; Hull, £12 15s; London, £13 7s. Maize Meal: Bristol, £12 15s; Hull, £12 5s; Liverpool, £12 5s; London, £11 12s. Maize Meal (S. African): Hull, £11; Liverpool, £11 5s. Maize Germ Meal: Bristol, £12 10s; Hull, £11 5s; London, £11 5s. Maize Gluten Feed: Bristol, £12 5s.; London, £11 5s. Locust Bean Meal; Bristol, £9 7s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £14 5s; Hull, £13 3s; London, £14. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £20; London, £21.

EGGS AND DEAD POULTRY.

Eggs are rather a slow trade, and prices show little material alteration. Following the Christmas sales, trade for poultry is dull, but, with supplies on the short side, values are fully maintained.

Week-end Prices—Eggs (per 120): British: 28s 0d, 27s 0d; Irish: 24s 0d, 23s 0d; Danish: 26s 6d, 25s 6d; Dutch: 27s 0d, 26s 0d; Australian: 23s 0d; Belgian: 25s 0d, 23s 0d; Italian: 23s 6d, 21s 0d; Argentine: 18s. 0d., 17s. 0d.; South African: 21s. 6d. 20s. 0d.

Dead Poultry (per lb.): Fowls—Surrey: 2s 0d, 1s 8d; Irish: 1s 6d, 1s 2d.; Oothers: 1s 8d, 1s 5d. Ducks: 1s 3d, 1s 1d. Geese: 1s 3d, 1s 0d. Turkeys: 1s 8d, 1s 3d.

EGGS.

Per Doz.—Ashford: First, 2s 7d; Second, 2s 4½d. Birmingham: First, 2s. 3½d; Second, 2s 2½d. Bridgwater: First, 2s 6½d; Second, 2s 4d. Carlisle: First, 2s 10d; Second, 2s 6d. Denbigh: First, 2s 6d; Second, 2s 4d. Dorchester: First, 2s 5½d. Hereford: First, 2s 2d; Second, 2s 0d. Ipswich: First, 2s 9d; Second, 2s 6d. King's Lynn: First, 2s 6d; Second, 2s 3d. Llandilo: First, 2s 3d. Newport (Mon.). First, 2s 6d; Second, 2s 4d. Oswestry: First, 2s 8d; Second. 2s 6d. St. Ives (Hunts): First, 2s 8½d; Second, 2s 6d. Salisbury: First, 2s 6d; Second, 2s 4d. Shrewsbury: First, 2s 9d; Second, 2s 6d. Skipton: First, 3s 0d. Truro: First, 2s 1d.

FOWLS.

Per lb.—Birmingham: First, 1s 0d; Second, 7d. Carlisle: First, 1s 0d; Second, 10d. Hereford: First, 1s 6d. Ipswich: First, 1s 8d; Second, 1s 6d. Llandilo: First, 1s 9d; Second, 1s 6d. Newport (Mon.): First, 1s 6d; Second, 1s 3d. Shrewsbury: First, *7s 6d; Second, *6s 6d. Skipton: First, 1s 4d; Second, 1s 2d. Truro: First, 1s 5d.

DUCKS.

Per lb—Birmingham: First, 1s 0d; Second, 10d. Carlisle: First, 11d; Second, 10d. Hereford: First, 1s 6d. Ipswich: First, 1s 6d. Llandilo: First, 1s 9d; Second, 1s 6d. Newport (Mon.): First, 1s 4d. Shrewsbury: First, *9s 0d; Second, *8s 0d. Skipton: First, 1s 4d: Second, 1s 2d.

* Per Head.

POST MORTEMS—Continued.

dip the heads of diseased birds under a similar solution once daily, taking care that the mouths are open. and keeping them under for twenty seconds. The examinations and treatment should be carried out every day until no more cases occur, and the whole flock should receive the medicated water, and that only, until the outbreak is over. The houses should be thoroughly cleaned up and disinfected, and all droppings collected and burnt.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, January 7th, 1925.

CONTENTS.

EDITORIAL 1
THE MIRFIELD AND DISTRICT LAYING TRIALS... 2
MODERN POULTRY FEEDING 2
SOME FRUIT GROWING NOTES 3
W. SURREY P.S. LAYING TEST 3
ANSWERS TO QUERIES ... ... 4 and 16
POST-MORTEMS ... ... 5 and 17
GLAMORGAN EGG-LAYING TRIALS 5
CORRESPONDENCE 5
S.P.B.A. ... ... 11 and 17
UTILITY DUCK CLUB NOTES 13
LEICESTER C.C. LAYING TRIALS 13
THE NATIONAL EGG-LAYING TEST 14
"DAILY MAIL" EGG-LAYING TEST 15
YORKS FEDERATION LAYING TEST 15
GLOUCESTER EGG-LAYING TEST 15
CHESHIRE C.C. EGG-LAYING COMPETITION ... 15
LONDON MARKET ADVICE TABLE 16
MARKET REPORT 18

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches. Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick. Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94. Farncombe Street, London, S.E.16. Telephone HOP 894.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue.. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

SPECIAL NOTICE.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

CORRECTION.

Mr. C. Winthrope Somerville asks us to state that a printer's error occurred in his letter in last week's issue of "Eggs." The figure 700 should read 7,000 square feet.

EG

Wednesday, January 14th, 1925.

EGGS

THE OFFICIAL ORGAN OF THE SCIENTIFIC POULTRY BREEDERS ASSN.

(Founded in 1912 by RANDOLPH MEECH).

Registered at the G.P.O. as a Newspaper.
Vol. XI. No. 2. Copyright.

Edited by TOM NEWMAN.
Price TWOPENCE.

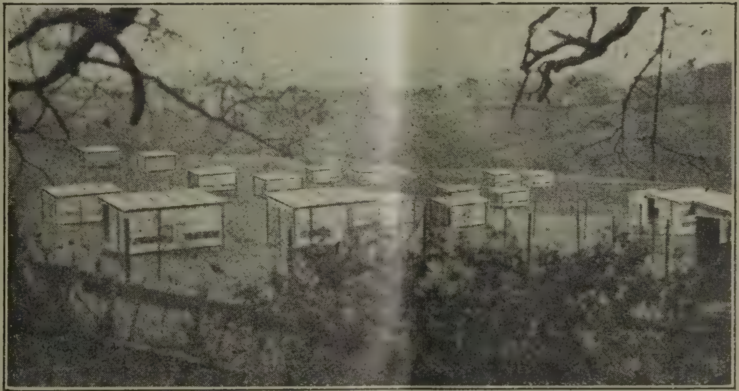
Twelve Months Post Free 12/8
Six Months " " 6/4
Three Months " " 3/3

EXTENSIBLE UNIT BUILDINGS

The success of your hatching and brooding operations next spring depends in great measure upon the housing of your breeding stock. Dismal parents cannot produce hardy offspring.

EXTENSIBLE UNIT BROODER HOUSES

will ensure a maximum of reared chicks.



Thirty double size Breeding Pens, each 14ft. x 7ft. constructed for John Meekings, Esq., Robertsbridge, Sussex.

Call and see Specimen Houses at ***BUSH HOUSE, ALDWYCH, W.C.,*** *or write to :—*

W. H. COLT, M.N.U.P.S., M.S.P.B.A., **Bush House, Aldwych, W.C.**
and BETHERSDEN, near ASHFORD, KENT.

EXTENSIBLE UNITS

PRIEST & SHAW.

Wyandottes

UNDER ROYAL PATRONAGE

I.O.W

ALWAYS WINTER EGGS

Cockerels + + **Pullets**

TESTIMONIAL LETTER.

The Homestead Poultry Farm, Amesbury, Salisbury.
8th December, 1924.

Messrs. Priest & Shaw,
Sandown, I.W.

Dear Sirs,—Will you kindly send me your mating list for next season.

I would take this opportunity of saying how pleased I was with the stock I had from you in 1921 (day-olds). The pullets laid exceedingly well; many put up fine records. Five pullets bred from them finished Third in their Class at the Wilts County Laying Trials last season.

Yours faithfully, VICTOR G. NEWBERRY.

WRITE FOR OUR 1925 MATING LIST.

SANDOWN —— I.O.W.

* * *

WE TRAP-NEST 2,000 PULLETS THROUGHOUT THE YEAR.

* * *

R.I.R. Pullet No. 44, bred from a "Heydown" hen, with record of 517 eggs in two years.

Early Hatched Pullets similar to the above from **10/6** each; individually recorded Cockerels, from **21/-**.

Sittings and Chicks in our Five Varieties Now Booking.

RHODE ISLAND REDS, WHITE LEGHORNS, BLACK LEGHORNS, WHITE WYANDOTTES, LIGHT SUSSEX.

John H. Dowden & Son, M. Council S.P.B.A., National Poultry Council, Fellow N.U.P.S., Southern Committee N.P. Institute,

"HEYDOWN," HEATHFIELD, SUSSEX.

Furniture and Incubation

HERE is an illustration of a beautiful hand-carved Jacobean chair—a piece of furniture that would enhance the appearance of any room. But it won't hatch eggs!

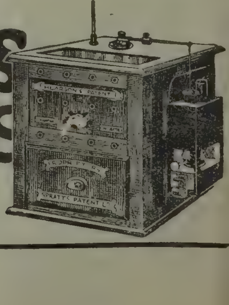
And that's just the trouble you will have with your hatching this season if you don't decide on the Hearson Incubator to-day.

The Hearson is made for your hatching sheds. It is built up to the highest pitch of perfection with one sole object in view—a consistent and efficient service that is going to double your rearing profits this season.

You are not buying furniture when you get an incubator. Look for the machine that makes the 100 per cent. hatch a concrete fact — that ensures uniform heat, correct moisture, plenty of fresh air—and that will be as good forty years hence as it is new to-day. The only machine that fulfils all these conditions is the Hearson.

And remember, too, a well-known saying adapted for the poultryman, "A thing of profit is a joy for ever."

Hearson's INCUBATORS



Write to-day for your big FREE copy of the invaluable booklet on incubation—"THE 100 P.C. HATCH,"
to Sole Proprietors: SPRATT'S PATENT, LTD.,
24/5, Fenchurch Street, London, E.C.3,
West End Showrooms: 14, Princes St, Hanover Sq, W.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, JANUARY 14th, 1925.

Editorial.

BREEDING.

Continuation of Paper read at a Meeting of the Lancashire Breeders at Preston.

I am coming now to a question which is of pressing interest, viz.: The Size of *Egg*. Dr. Benjamin, Cornell University, undertook research work into the size, colour and shape of eggs, and arrived at the conclusion that these three characters were distinctly inherited. Here are the results taken from his report:—

> " When a large egg sire was mated to a large egg dam, 59 per cent. of the progeny laid large eggs."
>
> "When a large egg sire was mated to a small egg dam, 35 per cent. of the pullets laid large eggs."
>
> " When a small egg sire was mated to a large egg dam, 65 per cent. of the pullets laid small eggs."
>
> " When a small egg dam and a small egg sire were mated, 82 per cent. of the progeny laid small eggs."

These figures are averages, and they cover a large number of years.

How can it be said that size of egg is " distinctly inherited " when we have two large egg parents mated and 41 per cent. of the pullets lay small eggs. I am not going to try and dispute the statement, but it does require elaboration. Is there not a danger of students of heredity when they are studying a particular character, ignoring other characters and factors which may materially affect their conclusions?—environmental conditions for example. These may be nutritional—that is the influence of the ration fed, climatic, disease, or any others incidental to incubation or rearing. There has always been a conflict of opinion as to whether size of egg was inherited from the sire or dam. You will see by the results that both parents contribute equally. That is probably true, but you take two sisters, both bred from the same large egg parents—one will mature and lay her first egg at, ay, five months old, and the other not until she is even months. The first will not develop the size of body, neither will she lay such large eggs as her later maturing sister, but as a general rule she will lay coniderably more eggs. She possibly inherited size of gg from both parents, but she inherited something lse—that is the early maturing factor, and it is the latter which she will transmit to her progeny, or, at least, a high percentage of them. I am not arguing that you cannot improve size of egg by mating males from large egg dams, but if your females have inherited that early maturing factor, it will assert itself, and you will find a large proportion of the pullets will lay small eggs. I agree that it is always wise to mate a sire from a large egg dam, but the results are sometimes very disappointing. I will try and give you an example of my meaning.

We take four Wyandotte hens, and label them A. B. C. D.

A. lays 200 eggs, first egg between 150 and 160 days old.

B. lays 200 eggs, first egg between 190 and 200 days old.

C. lays 260 eggs, first egg between 150 and 160 days old.

D. lays 260 eggs, first egg between 190 and 200 days old.

Now A. and C. are in the same category, they are both highly precocious individuals; they will be small birds laying small eggs, and they will be deficient in stamina, and they will transmit these traits to their progeny.

B. and D., on the contrary, provided they are bred from normal parents, will be of average size for their breed, will lay fair-sized eggs, and will possess average stamina.

If we mate a male from C. to A., we only accentuate the trouble, for early maturity is an inherited factor. If we mate a male from D. to A. no great improvement would result, for early maturity is dominant to late.

From the breeder's point of view, then, A. and C. should be scrapped. They possess undesirable characters which are dominant, and no matter how they are mated a *very* high percentage of their progeny would follow their parents, even to the point of constitutional vigour, for that is inherited from the dam.

Undoubtedly the best mating would be B. and a male from D. From this we have every right to expect good layers, of good-sized eggs and progeny with plenty of stamina.

Now I am coming to another question, which I think is of great interest. I want you to understand that I am only raising it for purpose of discussion, and am asserting nothing in any case. I do not minimise the value of the male bird. It is said that high fecundity is sex-linked, that the dam cannot transmit it directly through her sons—Pearl first advanced this theory. Goodale found it was not the case with R.I. Reds, and Hurst has stated that he did not find it so with White Leghorns and Wyandottes.

It is of interest that both in the good and bad layer the number of ovulas or potential eggs is approximately the same, and I venture to suggest that in the study of the Inheritance and Fecundity sufficient importance has not been attached to this fact ; or, to put it in another way, the study of genetics has been a study apart, without any regard to the study of physiology or the constitution of the hen with which it is inter-dependent, and that this has led to the confused ideas as to what we shall term, for convenience, the mode of inheritance of fecundity.

All hens are fecund—it is a matter of degree. What is of importance for us to learn is what it is that permits the highly-fecund hen to give the fullest expression to this racial characteristic? What it is that prevents her low-fecund sister from doing so?

The answer to the first question will probably be :—" Her environment," but that is not even partially true. The environment is but an incident. It may prevent her from giving the fullest expression to her racial character, but it cannot cause her to do so ; the environment will not help the low-fecund sister, who has inherited the same number of ovulas, to become highly-fecund. In effect, then, I am suggesting that it is the physical constitution, or perhaps it will be more clear, and distinguish physical constitution from physical conformation, if we say it is the chemical composition of the body which determines whether a hen shall be high or low fecund, which is tantamount to saying that all hens have the same genetic constitution, and, in so far as they inherit the same number of ovulas, this would appear to hold good.

This brings us into conflict with established theories, as, for example, that high fecundity is sex-linked, that the dam cannot transmit her fecundity to her daughters direct, but can only do so through her sons. The individual is the product of two others, and of necessity differs from either ; thus his or her constitution is not wholly that of the dam or sire, but partakes of both, although not necessarily in the same degree ; the progeny may have the constitution of either sire or dam more strongly impressed upon them. This is very apparent in all flocks, and is the more noticeable when the blood lines of the parents are widely different from when they are the same.

The mating of a highly-fecund dam to a low-fecund male will result in wide variation in the production of the progeny. My suggestion is that the female will transmit her fecundity to all her daughters in the same degree, but the degree in which they are able to give expression to this character will depend entirely on what extent the individual partakes of the physical constitution of the dam or sire. If, in such a case, it is largely that of the sire, then production will be low, because his physical constitution INHIBITS high fecundity. If it is largely that of the dam, then production will be high, although it is improbable that any individual will equal that of the dam.

(Continued at Foot of Next Column.)

(To be continued.)

Modern Poultry Feeding.

By **TOM NEWMAN.**

A COMPLETE POULTRY RATION.

A member, writing for advice on feeding, mentions a paragraph in the " Times," which states that a flock of Barred Plymouth Rocks have been kept in complete health and production for a period of twelve months on a diet which consisted exclusively of skimmed or buttermilk and kibbled maize. I believe the experiment was made in America, but I have no details. He asks whether I think it possible for such good results to be obtained on such a diet.

The best answer to that is, that it has been done, so we need not discuss the possibility. We will assume that skimmed milk only was used. If we begin by remembering that milk itself is a complete food, and that skimmed milk has only been deprived of its fats, which would be amply replaced by the maize, there appears to be no good reason why it should not be possible. As I have no details, I cannot say what range the birds had, and whether they were able to supplement this ration with green food and insect life or not. Assuming they were not able to do so I am still inclined to think the ration would be sufficient. It is indeed hard to say where it would be deficient. As the protein of milk cannot be improved upon, the mineral content would be well balanced, the maize would supply the Vitamin A., which would have been removed from the milk with the cream ; there would be no lack of B. vitamin, and the carbohydrates and fats would, as mentioned before, be also found in the maize.

Some years ago we published in these columns particulars of the experience of a general farmer. His method of feeding was simple in the extreme : the birds had very extensive range, and all they were given to supplement the natural food they found was maize, to which they had free access, fed in troughs in the fields. It will be readily understood how they "balanced" the ration. There would be abundance of insect life to supply the necessary protein, and there would be no lack of mineral salts or vitamins in all the green food consumed. Unfortunately we cannot rely on such simple rations as these when we are running 400 birds to the acre.

A correspondent writes as to the value of heavy grain feeding for growing stock—breeders and layers. I do not believe in feeding grain heavily to either growing stock or breeders, because its protein is of poor quality, and the mineral content deficient. Growing stock develop more rapidly on mash feeding. In the first place it is much more easily digested, and, secondly, we can supply in the mash all the necessary food constituents which is impossible with any combination of grains, whether cereals or pulse. We have had this demonstrated to us by the Wellingham experiments, where the pullets were fed no grain whatever for the first eighteen months of their lives, yet began to lay at 16 weeks old, and in spite of this developed into large framed birds, which were in perfect health, laid large eggs, and caused a sensation when exhibited at the Harper-Adams' Conference, while the live weight of one of the cockerels was 5lbs. 2ozs. at fourteen weeks old. It is, of course, necessary to study environment, for breeders in confinement. I would prefer two-thirds of the food to be given as mash, because cereal grains are so deficient in their protein and mineral content, but on free range it would be well to give 2ozs. of grain daily. As to layers, during the short winter months, it is advisable to feed grain, preferably kibbled maize heavily as the last feed.

I note with some satisfaction the very small percentage of animal protein used in the National Laying Test at Bentley, according to the report, ranging between 5 and 8 per cent. This demonstrates what I have so often said, what a mistake it is to feed a high percentage of animal food to the stock. It is costly, and when fed in excess injurious to the birds' health. I believe I am right in saying that 8 per cent. is never exceeded in the Harper-Adams' test. I drew attention to the waste and injurious effects of this excess of animal protein some seven or eight years ago, when it was customary to feed as much as 25 per cent. on some of the commercial egg farms. We heard a good deal about maize causing liver disease some years ago—a far more prolific cause is an excess of fish or meat meal.

I read with very great interest Major Saunder's article on Prolapsus in the new Register, and if I may be allowed to say so, it is the finest article I have yet read on the subject. I was particularly interested in his remarks on the possibility of its being infectious. He says:—

> "There is no reason to suppose, or proof that it is, but the coincidence of vent gleet should not be lost sight of, or that like conditions may arise from similar causes. The fact that many cases of prolapsus are constantly occurring in a flock is no real proof of its infectivity, *but only that members of the flock are all exposed to the same conditions that cause the trouble.*"

I must ask the Major to forgive me for "butting" in. Some three years ago the trouble was so prevalent that letters arrived by every post asking as to cause and prevention. It was an unusually mild and sunny spring, the losses in some flocks were very heavy, and there was a good deal of correspondence in these columns on the subject, and the suggestion of infection was seriously discussed. It is to the Major's last sentence that I would call attention. You will find that prolapsus, is far more prevalent in the natural laying season than at any other time of the year, as we should expect. The hint that I am going to give you is that if you have any trouble of this kind cut maize out of the ration for the time being. Maize helps to form yolks more rapidly than any other cereal owing to its high fat content. It is too stimulating to the highly fecund hen in the natural laying season. We have tried the reduction of animal protein on many occasions without effect, but when the maize has been cut out, or considerably reduced, the result has been satisfactory. When shell-less eggs are common, as they often are in the flush months, a reduction of maize in the ration, or its omission, will put matters right for the same reason.

(Continued at Foot of Next Column.)

Some Experiences of Selling Eggs for Sitting.

By **NORAH SEDGWICK.**

It sounds delightful! Twelve eggs for 5s., or anything up to 10s. 6d. Of course, there are items to deduct, but there will be still a good profit left.

CARRIAGE PAID.—When starting one thinks 6d. to 9d. per dozen will cover that. In experience I find that more customers seem to order from Land's End, or the north of Scotland, than from the next station.

BOXES.—Yes, but when the initial cost is paid, they will last for years, and, of course, customers will return promptly, and in good order. (Two years ago it took me six months, and a threat of legal proceedings, to extract a very good box from a customer. We fancied he had used it in "his turn").

INFERTILES.—Here we hesitate. Shall it be "infertiles replaced," or fifteen eggs for the cost of twelve, and hear no more about it? If we take the former course our troubles seem never over. Of course, clear eggs *should* be returned within ten days after despatch, but are they?

Personally, I have had the first complaint of infertility made after six weeks! Some correspondence ensued, and some of the eggs were sent back for inspection. Out of 100 sent the customer declared 96 to be infertile, and the remaining four died in the shell. To cut a long story short, we wanted to be generous, and though other customers were hatching well, and it was difficult to spare so many, we offered to replace 50. In our judgment the eggs returned were mostly broken yolks or weak germs, but it is most difficult to decide after that length of time. We did eventually send 100, but until we insisted on acknowledgment of replacement, were never thanked for doing so.

Then it is really difficult to make people realise the difference between "clears" and "broken yolks"; the correspondence is endless, and temper on both sides not invariably good.

Also note that just when orders are fully booked, there will come an epidemic of clear eggs (real or imaginary), and it often throws out all your carefully laid plans, or you think this replacing is a perfect nuisance, and decide to give fifteen for the price of twelve. Then you get pathetic letters telling you that only 41 in 50 eggs were fertile, and you patiently explain to your worried customer that he must not expect more than four-fifths to be fertile, and so on, and so on. Again, in late Autumn, as the Editor pointed out in "Eggs" of September 24th, in his article on "Table Poultry and Eggs," there is a great and growing demand for hatching eggs for early table work, especially from the crosses. Such eggs should be from *hens*, not pullets, but hens are not always laying well then.

Early-hatched cockerels (January or February) are almost essential, and even then you may have a bad run of fertility. It is all very well to give fifteen for twelve, and no replacements; but if, as will happen, the weather is bad, and the male bird slack, you may have an undue proportion of clear eggs, and then where are you?

The most accommodating buyer expects some fertile eggs, and if there are more infertiles than is fair, you are in honour bound to replace—in spite of your advert. to the contrary! Again you upset your own carefully-laid plans and disappoint your customer, who cannot make up for lost time.

To me, Mr. Newman's suggestion of a guarantee of 80 per cent. fertility comes as a practical solution of the difficulty, and I shall hope to adopt it for the future—possibly 75 per cent. for Autumn hatching, when fertility is really the difficulty. His article interested me very much, and I must just touch on the question of price for these Autumn eggs. Fourpence each, *carriage forward*, and 80 per cent. fertility guarantee seems to me fair, but otherwise—and I speak with some experience—I do not think it a paying proposition from September to Christmas. You must have early-hatched cockerels to be fairly sure; you must feed and house well.

If you can sell eggs for eating at the door at 2d. to 3d. each, it really hardly pays to collect, store, pack and despatch for sitting unless you get 4d. each, plus carriage.

You are quite likely to get some correspondence added to your other troubles, and you must have compensation for this. But sending out sittings is fascinating work, and arranging your orders "according to plan" is delightful when all goes well.

I must report one kindly customer who did not grumble at infertility, but noted pen number, etc., on the eggs, and wrote a gentle suggestion that the bird in a certain pen was evidently not doing his duty. We found he was perfectly correct, though the bird was early hatched, and specially bought for Autumn breeding from a first-rate breeder. The breeder replaced him for us.

LAINDON LAYING TEST.—THIRD PERIOD.

Section 1. (Five Pullets, Light Breeds).—T. Miller (W.L.), 160 pts.; H. Maycock (Blk. L.), 128 pts.; F. Freeborn (W.L.), 130 pts. Monthly Certificate, T. Miller.

Section 2. (Five Pullets, Heavy Breeds).—E. Bazin (R.I.R.), 170 pts.; H. J. Thomson (R.I.R.), 158 pts.; W. Belsham (R.I.R.), 126 pts. Monthly Certificate, E. V. Bazin.

Section 3. (Light Breed, Single Bird).—East Anglian P.F. (W.L.), 49 pts.; W. Willenz (W.L.), 44 pts.; W. Willenz (W.L.). 49 pts. Monthly Certificate, East Anglian P. Farm.

Section 4. (Heavy Breed, Single Bird).—C. Sheridan (W.W.), 58 pts.: Miss Bergman (R.I.R.), 52 pts.; H. Jones (R.I.R.), 53 pts. Monthly Certificate, C. Sheridan .

Section 5. (Gift, any Breed).—H. Maycock (W.W.), 47 pts.: E. V. Bazin (W.W.), 50 pts.; F. Freeborn (W.W.), 34 pts. Monthly Certificate, J. H. Hamilton.

First-class Certificate for highest scoring pullet for month.—T. Miller (W.L.), 27 pts.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

A. P. (Wycombe) is evidently inexperienced in incubating, for of the twelve eggs he sends to know why they have not hatched, six were infertile, three were addled, one had died on the 15th day, and the two others were dead-in-shell, failing to hatch from lack of vitality. Evidently the stock birds are at fault, A. P. Is the male sufficiently matured? The sample of ground oats sent is a very good one.

M. B. (Warrington) sends some shrunken feathers, and asks what disease his pullet is suffering from. The conditions of the feathers, M. B., is due to a parasite located in the glands at the roots of the feathers, and lives on the secretions that nourish them. Pluck out all the feathers which are affected, and soak the part with a two per cent. solution of Izal. He wants to keep ducks, and asks which breed I recommend as a good layer and table bird. My preference would be for the Buff Orpington, M. B.

A. H. C. (Newport, Mon.) should get Punnett's "Mendelism" and "Heredity," as he wishes to study scientific breeding. In answer to his questions on this point. Pearl defined three types of producers—those which lay no eggs during the winter period, those which lay less than 30, and those which lay 30 or more. These three types are represented by symbols, and there are three factors involved:—(1) An anatomical factor—the ovary—denoted by the capital letter F. (2) The first productive factor, a primary physiological factor. This in conjunction with F. makes the hen lay eggs during the winter period—more than zero, and less than 30. Its presence is denoted by L1 and absence by l1. (3) The second production factor—a second physiological factor—which, with F. and L1, leads to high fecundity. This factor is denoted by L2, and when it is present, in addition to F. and L1, it makes a winter production of over 30 eggs. (2) The answer to his second question will be found under "Modern Poultry Feeding."

Disappointed (Egham) paid a high price for a White Wyandotte cockerel in October, which contracted a very severe cold, followed by an almost complete moult. He is now in a very poor condition, and my correspondent, who does not want to go to the expense of buying another bird, asks me as to the advisability of mating his early-hatched pullets to their sire. He stated that he knows I condemn the practice, but "will you consider the circumstances?" I am sorry for your bad luck, Disappointed, but with every consideration for the circumstances, you must admit that it would be very wrong on my part to advise a mating which I strongly feel could only give disappointing results. As I have said repeatedly, such a mating should only be made with a stock which is exceptional in every respect, in fact it should be limited to individuals, and I would not advise a breeding pen on these lines. It will pay you far better to get another bird. I should not think twice about it.

G. and R. are getting a poor egg yield, and send a sample of a proprietary food, which contains three ingredients of very inferior quality—bran, clover, and ground oats. The latter are very husky, and the clover contains too much stalk; there is too much bulk in the mash, and the only advice I can give them is to get something better, or use one of the mashes given so frequently in these columns. It is hopeless to expect to get eggs with such feeding as this. In reply to their second question, the house 12 x 10 will accommodate 36 Leghorns and 30 R.I. Reds.

Wyandotte (Devizes) is afraid his Wyandottes are getting too small, although the size of the egg is satisfactory. He proposes to mate them to an exhibition male, and asks my opinion. (2) He wants to know if he mates Leghorn-Wyandotte hens to a R.I. Red male whether he will be able to distinguish sex of chicks at hatching. (3) If artificial light results in a total increase in pullets' production. I do not like this idea of trying to improve size by mating to an exhibition male. He will possibly lose both size and number of eggs. A better plan would be to select his largest hens, and mate them to a good utility cockerel rather above the average size, and in future matings discard all precocious pullets, or any that as hens fail to scale over 5lbs. The answer to his second question is NO, and to the third NO. Artificial lighting only results in an increased winter yield, and does not affect the year's output.

"X" (Dorset) sends samples of fish meal, "A." and "B.," one at 21s. and the other at 26s. "B." at 21s. is not quite such a dry sample as the other, but it is good value for the money. If she could get a guaranteed analysis that the salt content does not exceed 4 per cent., I would advise her to use it. The sample of sharps at 11s. is of good average quality, and quite fair value for the money in these times. Bran is not good enough. It would be far better, "X," if you were to pay a higher price, and get some really good broad bran. In reply to your query as to the storing of of eggs. It is only a week or two ago that I gave details as to how this should be done in these columns. They should be stored on their sides in bran. They need not be turned daily before incubating, and they do not require any airing.

F. J. J. (Whetstone). Your formula would be better if you were to replace one part of the bran with another part middlings. In other respects it should give excellent results.

R. C. (Salop) writes that he has three Leghorn pullets, three backyard pullets, and a Leghorn cock. These pullets started to lay on 23rd November, but very irregularly. The back of the combs are turning white, about the size of a half-crown. A neighbour, who used dry mash, told him to try this. Before doing so he was using wet mash. He reduced the quantity of wet mash two ounces per day until his stock was cleared. Now he is using dry mash the birds have practically ceased laying. He is using the following formula:—One bran, one alfalfa meal, four middlings, one ground oats, one maize meal, one meat and bone meal, and has weighed out 1½ozs. of this to the Leghorns, and two ounces to the Backyarders per bird per day, making a total of 12ozs. in all. In addition, they have had 12ozs. of grain in the morning in the scratching litter, so that we have seven birds getting 24ozs. of food per day between them, or about 3¼ozs. per bird. It is not very wonderful that you are not getting eggs, R. C. In effect your birds have barely enough to maintain them, much more to produce eggs. If you feed the dry mash, allow the birds as much as they will consume, leaving the hoppers open all day, and, in addition, give them a good two ounces of grain per head as the last feed about a quarter of an hour before they go to perch. If you ever wish to be successful in poultry keeping give up the idea of weighing out the food. A bird's appetite varies very considerably, whether she is in full production or not. I think the white patch on the comb is due to your under-feeding, and is merely that the birds are in such poor condition that the comb is shrivelled up owing to the inactivity of the ovary, and unless you give them more food they will fall into a moult.

E. C. R. (Carlisle) is suffering from a bad outbreak of egg-eating in his breeding pen. Thirty valuable hens and ten trap-nests in the house, four or five of the hens lay on the floor, and their eggs are at once pounced upon and devoured. The birds make a violent rush for the eggs. He has tried filling the eggs with nauseous ingredients, such as a strong solution of quassia chips, ammonia, pepper, vinegar, and mustard, but the rush still continues. He has always a few china eggs in the litter, but his has not helped matters. I am afraid there will be no other resource but to pare the beaks down . As a rule this is the last resource. Pare the beak down to the quick with a sharp knife, taking care not to make it bleed, keep the china eggs in the litter, so that they may have a go at these, and a hard peck on a sensitive beak will perhaps do more to stop the trouble than anything else at its present stage. Ever since this egg-eating trouble started the birds have taken a strange fancy for eating as much flint grit as they can get. They appear keener on it than their food. Most of the grit is passed into the droppings in the same state as it is eaten. He asks what is the cause of this. I cannot answer this question. It frequently occurs, and would appear to be due to some deficiency. My own impression is that the birds take to this when they are hungering for lime. I would advise E. C. R. to provide as much oyster shell as possible, and remove the grit for the time being.

POST-MORTEMS.

K. M. G. The cause in the case of the White La Bresse cock was gout and uraemic poisoning. The kidneys and their ducts were densely blocked with urates which prevented them from eliminating the waste products of the system. The bird was in an emaciated condition, showing that the trouble was of some duration. The other two you lost may of course have been affected in like manner, but male birds are very subject both to heart failure and apoplexy, and it may have been one or other of these complaints that caused their deaths. As a matter of precaution, it would be advisable to fast the remainder for twenty-four hours and then give twenty grains of Epsom salts per head, mixed in the morning mash. The salts could, with advantage, be continued daily for a week, as tension would thereby be lowered and the eliminative organs flushed of effete matters.

H. A. B. The post-mortem examination of the Leghorn hen showed the cause to be acute haemorrhagic inflammation of the kidneys. This condition is associated with certain acrid and poisonous plants, and also with mouldy or spoiled food. Tainted meat or fish meal are also sometimes responsible, and I should advise a careful scrutiny of the foodstuffs supplied to these birds. To promote elimination, give twenty grains per head of glauber salts, dissolved in the water that is used to mix the mash, and continue daily for a week.

J. E. B. The fowl was suffering from chickenpox, which, according to some authorities, is only one of the manifestations of roup. The disease is very contagious, and affected birds should at once be separated from the rest of the flock, and the whole of the premises and equipment thoroughly cleaned up and disinfected. The sores on the heads or face should be scraped clear of scabs (which should be burnt) and painted with tincture of iodine. Any yellow patches seen in the mouth or throat should be removed by scraping, and the raw surface cauterised with a silver nitrate pencil. Give the whole of the flock water to drink in which has been dissolved one dram of copper sulphate to the gallon, and dip the heads of affected birc in a similar solution once daily. Care must b taken to hold them so that the mouths are oper and the heads should be held under for twent seconds. The medicated drinking water should b given until no more cases occur and the outbrea is controlled.

G. T. R. The post-mortem examination of th W. Leghorn pullet showed the cause to be per tonitis and internal haemorrhage. These con ditions arose from apoplexy of the ovarium an several yolks on the stalk. The yolks were full c blood, and two of them had ruptured, causing th haemorrhage. Apoplexy of the ovarium is asso ciated with a too stimulating diet and with th administration of so-called laying tonics or spices I should advise a revision of the diet tables, and course of salines to reduce tension. Fast fo twenty-four hours, and then give fifteen grains pe head of glauber salts mixed in a small mash. Continue the salts for a week or ten days, enforc exercise by scratching, and provide plenty o green stuff.

G. G. The post-mortem examination of th chicks showed the cause to be pneumonia in every case. The pneumonia is of the infectious variety and is caused by the Aspergillus fumigatus, which is one of the moulds. Dampness and decaying vegetable matter, rotting pieces of sacking, etc. are most favourable to the growth of this fungus so that a thorough clean up and disinfection o premises, equipment, etc., is most necessary t prevent its spread. Incubators, hovers, and the floors of the houses should receive special attention. Although treatment of affected birds is unsatisfactory, the resistance of the remainder can be raised by giving water to drink in which has been dissolved forty grains of the citrate of iron and quinine to the gallon.

A. B. The cause in the case of the pullet was gout. The kidneys and their ducts were blocked with urates, and there was a heavy incrustation of gouty deposits on the pericardium, which had prevented the heart from functioning normally. The blocking of the kidneys would prevent proper elimination of waste products and cause uraemic poisoning. Fast the remainder for twenty-four hours, and follow up with twenty grains per head of glauber salts, dissolved in the water that is used to mix the mash. The salts should be given daily for a week, exercise enforced, and a plentiful supply of green stuff provided. I should advise giving less maize for the present, either reducing the quantity in the mash or in the grain ration.

H. R. The post-mortem examination of the R.I.R. cockerel showed the cause to be diphtheritic roup. The micro organism causing this disease is not known, as it is ultra-microscopic, and passes through a bacterial filter. Roup may occur in three forms, either separately or in any combination; sometimes all three are present at the same time, at others they may follow each other, or only one type may persist. In the above case the cockerel at first suffered from the catarrhal form, the diphtheritic form appearing later. As the period of incubation is short, two weeks' quarantine is deemed sufficient to prevent introduction into a healthy flock. Such being the case, I should advise the incontacts being isolated for that period. The copper sulphate treatment, one dram to the gallon of drinking water, should be extended to the whole flock, and, as a matter of precaution, the incontact hens should have their heads dipped, daily, under a similar solution. Hold them so that the mouths are open, and keep the heads under for twenty seconds. The precautions that you have already taken, as regards disinfection, should be sufficient to prevent anv further spread of the trouble.

WYE COLLEGE DUCK LAYING TEST, 1924-1925.

Held in conjunction with the N.U.P.S. and U.D.C., at the South Eastern Agricultural College, Wye, Kent.

This Test, which commenced on November 1st last, extends over a period of 48 weeks. Each entry consists of five ducks, of which there are 155 in all. All the ducks are trapnested, and are run as one large flock on free range over grass land.

The eggs are graded according to weight, a first grade egg being one which weighs 2 ozs. or over. Second grade eggs are those which weigh under 2 ozs.; these do not count for awards.

REPORT FOR SECOND PERIOD (Nov. 29th to Dec. 26th, 1924).

The number of ducks in lay during this period has been 66, as compared with 49 last month. The average number of eggs laid per bird during the month has been 8.14. The average for those in lay has been 19.13. The average per duck to date is 13.78. These are slightly better averages than for the same period last year. The average per duck (in lay) is still much better than that for last year. The total number of eggs laid during the month has been 1,263, and the total laid to date is 2,137.

The leading position in the whole of the test is this month taken by Mr. W. R. Partridge's Pen No. 19 (White Runners), which have a score to date of 205 first grade eggs and an average per duck of 41.

The leading pens in the breed sections are:—

Khaki Campbells.—Miss Harrison Bell's Pen No. 11, 168 pts.; Major J. Dugdale's Pen No. 2, 142 pts.

Indian Runners.—Mr. W. R. Partridge's Pen No. 19 (Whites), 205 pts.; Messrs. R. A, & A. M. Johnson's Pen No. 14 (Whites), 176 pts.

Buff Orpingtons.—Capt. W. O'G. Cochrane's Pen No. 22, 48 pts.; Mr. C. C. Chittenden's Pen No. 24, 47 pts.

Magpies.—Mr. C. N. Goode's Pen No. 26, 128 pts.

Competitors and others may visit the Test on Wednesdays by appointment only.

DERBYSHIRE LAYING TEST, 1924-25.

The Second Four Months' Laying Test, organised by the Derby Branch of the National Utility Poultry Society, and conducted on the Utility Poultry Farm of Mr. J. Thornhill, Great Longstone, Derbyshire.

SUMMARY OF LEADING PENS.

Section 1 (3 Birds).—Heavy Breed.—Alvaston P. Farm (W.W.), 339 pts.; J. K. Peach (R.I.R.), 192 pts.; S. Ryle (R.I.R,), 305 pts.

Section 2 (One Bird).—Heavy Breed.—Alvaston P. Farm (W.W.), 150 pts.: J. K. Peach (R.I.R.), 116 pts.; J. H. Allan (W.W,), 93 pts.

Section 3 (One Bird).—Heavy Breed.—Backyarder.—W. Sharman (R.I.R.), 57 pts.; W. H. Beck (W.W.), 29 pts.

Section 4.—Pen of Three Birds.—Light Breed.—Alvaston P. Farm (An.),, 206 pts.; P. Knowles (W.L.), 186 pts.; T. D. Willcocks (W.L.), 153 pts.

Section 5 (One Bird).—Light Breed.—C. Gresley (W.L.), 117 pts.; Alvaston P. Farm (An.), 108 pts.; J. Godfrey (B.L.), 86 pts.

Section 6.—Light Breed.—Backyarder.—F. Goodall (W.L.), 95 pts.; S. Watts (W.L.), 26 pts.; J. Parkes (W.L.), 24 pts.

All birds are in good health.

The 1 oz. 15 drms. needed for an egg to score as first grade in December, as against the 1 oz. 14 drms. in November, resulted in many only passing as second grade this month, thus losing points.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

DEAD-IN-SHELL.

I am beginning to wonder whether there is a dead-in-shell problem or not. We have been discussing it so many years, that I shall be rather disappointed if there is not, for a problem which you believe to be insoluble is always an attractive one.

The real difficulty appears to me, to know when the eggs are wrong, or when the incubator or the methods employed are wrong. My own impression is, that we think too little of the eggs and too much of the incubator, and this impression was strengthened after examining over 2,000 eggs last spring.

The **real** dead-in-shell, and by those I mean those which survived after the eighteenth day, constituted a surprisingly small percentage of the total. The great majority had perished before the tenth day. I think that one may fairly say that, eliminating accidents, it was the eggs and not the incubator or the incubating conditions which were responsible, although I still contend that a high percentage of germs are weakened and ultimately perish because of low temperatures in the first few days of incubation.

But coming to what I understand by dead-in-shell (those which survived the 18th day), I classified these as far as possible as follows:—

(1) No explanation could be given as to why they did not hatch.

(2) Chicks fully developed, completely filling the shell, very wet.

(3) Chicks fully developed, very small and dry, membrane very dry.

Taking (1). We can only assume that the eggs were not strongly fertilised, or there is the possibility of the germ being weakened in the early stages of incubation.

(2) Excess of moisture, or rather, I should say a badly ventilated incubator, for I do not believe you get an excess of moisture in a well-ventilated machine. Such chicks as hatch are very wet and weakly, and generally a fairly high percentage have failed to absorb the yolk.

(3) Stale eggs, or eggs which have been badly stored, too much ventilation in the incubator, resulting in eggs drying down too rapidly.

Here are particulars of a hatch sent me last week. Eggs 100. Infertiles 14. Cleared at testing (10th day) 12. Hatched 57. Dead-in-shell 17. The latter were sent to me, and I could not discover any reason why they did not hatch. Two have pierced the shell, all seemed normal. Now one might fairly ask, " Why did 57 hatch and 17 die in the shell ,when all were incubated under the same conditions? " I think the answer here must be that the eggs were at fault.

Which is the most critical stage of incubation? I have never seen that discussed. In my own view it is the first few days, and at that period it is primarily a question of temperature. It has been demonstrated that if you place eggs under a sitting hen for a week and then put them into an incubator, your hatch will be a good one, but reverse the conditions and take eggs after the first week from the incubator and place under the hen, there will be no better results. Now I think it will be agreed that at the early stage the germ is not likely to be much affected by excess of carbon-dioxide or lack of oxygen. Therefore, surely it resolves itself into one of temperature, in the last week to one of ventilation.

I think more importance should be attached to an equable temperature in the incubator room, and a more careful study of the ventilation of the incubator. This to my mind is more likely to improve results than endeavouring to measure the supply of moisture.

LAYING TRIALS.

The report of the TWELFTH IRISH EGG-LAYING COMPETITION, which was held at the Munster Institute, Cork, and concluded on 15th September, 1924, is to hand.

The competition comprised a total of 57 pens of pullets of various breeds, and 12 pens Indian Runner ducks. There were six pullets in each pen and four ducks.

The quality of the pullets on arrival was of a high standard, but the usual mistake is made which regularly appears in the report of every laying test—that many of the pullets were immature on arrival.

The average number of eggs laid did not compare favourably with 1922-23, being 178.78 per bird as against 194.5. This was mainly due to the fact that a new clause had been included in the regulations disallowing the replacement of pullets which died during the test.

The health of the birds was, on the whole, good. There were 28 deaths during the competition. In the majority of cases these were due to ovarian trouble; a fact which is responsible for the comment that " this weakness and functional derangement of the egg organs is one of the most serious problems with which the breeders of heavy laying strains are confronted." It shows the absolute necessity of very careful individual selection when breeding for heavy egg production.

One noticeable fact during the competition was that in some of the pens, which had good averages for the year, there were pullets which laid only from twelve to fifteen eggs.

Miss Sheedy, the manageress of the test, remarks on the distinct improvement in the size of eggs laid. Only fourteen out of the fifty-seven pens failed to reach the required average weight of 24 ozs. per dozen. White Wyandottes were the chief offenders here, and it was again noticed that the small-bodied bird produced the small egg. What a mistake it is to breed from these precocious pullets.

Wyandottes again won the Cup for the pen of pullets laying eggs of the highest market value. This year the Cup was secured by Mrs. Chearnley. The pullets in this pen were all of very good type and size. It was retained at the Munster Institute to complete the record for the year. The total number of eggs laid for the twelve months was 1,511.

I note with interest that in this pen there was one pullet which weighed 7 lbs. at the close of the test and two which weighed 6½ lbs. Their records were respectively 226, 221 and 203, and the number of second-grade eggs was only 3, 10 and 13.

The Second Prize was won by Mrs. Harvey. This pen included a pullet which laid 284 eggs, valued 42s. 3½d., and another which laid 273 eggs, valued 43s. 1d. Mrs. Strong was a good third with 273 eggs; but was badly let down by a pullet which only laid 45 eggs after March. Lady Dunleath was beaten on values by Mrs. Strong, although her birds laid two more eggs. They were a consistently good pen, and it is notable here that two pullets, each weighing 6 lbs. 12 ozs., laid 237 and 213 eggs respectively with only four second-grade eggs between them.

That size of eggs is not incompatible with numbers is very strikingly illustrated in this White Wyandotte section, where several birds, weighing 6½ lbs., have exceeded the 200.

Mrs. Croasdaile's pullet, weighing 6 lbs. 12 ozs., laying 262 eggs, of which only 11 were undersized, came next.

In the White Leghorn section Mr. A. J. McGillicuddy won the first prize, the pullets laying 1,338 eggs, valued £10 0s. 11½d. Mount S. Joseph Abbey was close up—only five eggs dividing them from the winner—while the actual weight of eggs was nearly 3 lbs. more. T. J. Maguire was a good third, and Mrs. Coubrough, with 1,227 eggs, fourth.

In Section 3 (any variety of Sitting Breed, except White Wyandotte), Mrs. Marshall Barnes won with a pen of Australian Black Orpingtons. This pen laid 1,275 eggs, averaging 25 ozs. and one dram to the dozen. One pullet laid 268 eggs, of which only 16 were second grade.

Miss C. Cavan was a good second with R.I. Reds, 1,233 eggs, averaging the same weight. Mrs. Marshall Barnes was third with R.I. Reds also, beating Mrs. Mitchell by 5d. in value, although the latter's birds laid 41 more eggs and the average weight was 1 oz. 10 drams heavier than Mrs. Barnes'. Mrs. Mitchell was unfortunately handicapped by a pullet which was excessively broody.

DUCK SECTION—A SENSATIONAL PEN.

The duck section, which was confined to Indian Runners—Fawn and White, and White—were only remarkable in one respect, and that was with regard to the sensational performance of the winning pen, owned by Mrs. Tallent, which averages 280¾ eggs per bird for the eleven months and 290¾ for the year. No. 37 in this pen laid 321 eggs during the test and completed the year with 348 eggs. This constitutes an Irish record. The highest English record is 350, and the highest World's record 363 in 365 days in New Zealand.

Mrs. Tallent is to be heartily congratulated on owning such a wonderful pen, as, in addition to the bird making the record, No. 38 laid 291 eggs, and the average for the pen was 70 eggs per bird more than her nearest competitor, Lady O'Shee.

THE SCOTTISH LAYING TEST.

The report for the second period of this test, which concluded on the 9th December, is to hand. During our recent visit to Edinburgh we visited the Test at Seafield, and can speak in the highest terms of the lay-out of the plant, and the construction of the houses, the general management, and the health and vigour of the birds. In every respect it was excellent, and one can hardly wish to see anything better. In spite of the very exposed position the birds were laying well, and there was no sign of any sickness. The birds, with some few exceptions, were of good type and representative of the breeds. In one or two cases, both in Leghorns and Wyandotte, the pullets were on the small side.

The duck house was certainly a very fine one. Indeed, one might say a less elaborate structure would have answered the purpose.

The pullet average for this second period is 13.77 eggs per bird as compared with an average of 11 in the first period.

The number of duck eggs has been 294, with an average of 272, which is highly satisfactory.

The average production of the Leghorns to the 9th December was 29.50 per bird, Wyandottes 27, R.I. Reds 15, Black Leghorns 18.9, Anconas 17.16, Buff Rocks 34.91, Barnevelders 12.66, Light Sussex 8.

Windsor, Kelly Bray, Callington, Cornwall.
1st January, 1925.

Dear Sir,—"Eggs" has been a real help to me. It is the best Poultry paper I have ever read, especially for the person which is trying to earn a living by poultry.

Yours truly,
(Signed) JAS. WILLIAMS.

Correspondence.

REMOVING TREE STUMPS.

To the Editor of "Eggs."

Sir,—During the war large numbers of trees were cut down and sawn through the trunk at ground level, the roots being left in. Will some of your readers, who are able, be good enough to give instructions for removing these stumps in an inexpensive manner?

I believe if holes are drilled in them and some acid poured in they will soon rot. Another way is to bore a deep hole and put some explosive in and blow them into pieces.

What is the name and price of the acid, also the explosive?

"ARDENT."

FOWLS FOR MEAT PRODUCTION.

To the Editor of "Eggs."

Dear Sir,—The Ministry of Agriculture is drawing attention to the experiments of finding out which are the best meat producing fowls and their general table qualities. This side of the poultry industry has, of late, somehow fallen behind in the mania for laying tests for egg production.

After trying experiments over a series of years, I have come to the conclusion that there is no "best breed" for producing meat.

The ideal fowl should carry the maximum of meat and the minimum of offal. The meat should be carried on a full, square breast, to such an extent as to almost obliterate the breast bone. The flesh should be white (not yellow) and the bone fine. It must, in addition, have flesh of a "gamey" flavour, and be fine in texture.

In my experiments this is the fowl I set out to produce. I have kept most of the heavy breeds, including White Wyandottes, White Orpingtons, White and Salmon Faverolles, Houdans, and all the varieties of the Sussex, but with none of these was I satisfied.

I next crossed hens of the above breeds with Old English Game Cocks, and it was only then that I got, in my opinion, the perfect meat fowl. The increase in weight, but more especially in the cockerels, averaged from fifty to a hundred per cent.

The difficulty experienced by breeders of White Leghorns, and the lighter breeds generally, in disposing of their surplus cockerels, owing to their carrying nearly no meat, induced me to try the Old English Game cross in this direction, and I put an Old English Stag with half a dozen Leghorn hens. At three months old the cross-bred chicks were double the weight of the pure ones. The pullets came a lovely pile colour, carried 50 per cent. more flesh, were hardier, and laid more eggs than either of the parent breeds. This cross would prove the solution of having to rear light breed cockerels at a loss.

I, and my people, have bred Old English Game Fowls for several generations, and this breed crossed with practically any other, especially with Sussex, produce an amount of meat of beautiful texture that would prove a revelation to those who have not tried it.

Yours, etc.,
JOHN WATSON.

ADVANTAGE OF EARLY HATCHING OF DUCKS.

To the Editor of "Eggs."

Dear Sir,—The following records obtained during 1924 from my Buff Orpington Ducks would appear to demonstrate the advantage of hatching ducks as early as possible in order to get good egg returns:—

(1) Ducks hatched 31st January, 1924. Records up to 31st December, 1924: No. 1, 155 eggs, 17 under 2ozs. No. 2, 135 eggs, 27 under 2ozs.

Average per bird for whole of hatch: 108.4 eggs, 12.4 under 2ozs.

(2) Ducks hatched 23rd February, 1924. Records up to 31st December, 1924: No. 1, 122 eggs, 15 under 2ozs. No. 2, 106 eggs, 11 under 2ozs.

Average per bird for whole of hatch · 82.8 eggs, 9.5 under 2ozs.

Some but not all of these Buff Orpington ducks stopped laying for a short time during a partial moult, also from shifting pens and mating up, but they are all now in full lay, the January hatched birds being less upset than the February ones. With my Runner Ducks the difficulty in obtaining good fertility counted against early hatching, and the results were not quite so good.

From my experience I find that ducks start laying, roughly, a week older for every month later in the year that they are hatched—for example, say a duck hatched in January starts to lay at 4½ months, one hatched in February will start at 4¾ months.

Yours, etc.,
W. O'G. COCHRANE.

APEX HOUSES.

To the Editor of "Eggs."

Dear Sir,—I for one have been greatly interested in all that has been written on "Apex" houses, as no doubt have many others.

From the drawings, so far given, I have worked out a series of designs, and cost of same, compared with other houses—Intensive or Semi-Intensive, the latter being my type. The difference in cost alone is rather startling. In fact I was so amazed at the difference—my costing was checked by a friend in the trade—I felt sure I had worked it out wrong. This, along with the statement this week, 2½ feet of floor space instead of 4ft. per bird being necessary, reduces the capital expenditure to such an extent, that one's ideal poultry farming on a fairly large scale is brought much nearer than heretofore. As I am just considering a fairly large extension, and very anxious to move along right lins, both scientifically and economically, may I enquire through your most valuable medium for a little enlightenment on one or two rather important points?

(1) I presume the Apex houses would be fixed north and south, lights on both sides therefore being east and west. Any light at ends.

(2) Would it not be better for nest boxes and perches to be placed right along the centre of house?

(3) How is the ventilation arranged (surely not merely apertures), i.e., type of ventilator, etc., fixed at the sides. On both sides or only one?

(4) Is the ventilator level with the floor, or a little higher? I ask this because of his reference this week to shutters, and the lights as being only "six inches" above the floor.

(5) Has Mr. Somerville any prepared drawings, with all particulars to supply to those interested, or is any reliable manufacturer building houses to his specifications?

Answers to the above would take us a stage further, and as no doubt many are arranging for extensions, would be greatly appreciated.

May I utter one word of appreciation for Mr. Somerville's suggestions, for certainly all who have "read, marked and inwardly digested," are prepared to prove by practice the soundness or otherwise of his proposals.

Yours faithfully,
"ENQUIRER."

To the Editor of "Eggs."

Dear Sir,—I was very interested in "Ex-Airman's" letter and also your Editorial of the same issue. The first thing I should like to say is that the average poultry farmer wants to be treated as a man, and not pampered because he has been in one of the services. He wants to succeed **because** he is a **man**, and not because he has been **pampered.** I quite agree with what you say about individual effort, and the view of your correspondent who says that "the Lord helps those who help themselves."

With reference to co-operation, the whole thing seems to be the start. It is not a question entirely of carelessness, but of waiting for a **better** man than oneself to start. Poultry farmers of a locality should join together, and choose a leader from themselves; otherwise they may wait for ever. I am still wondering, however, if the average miller is really making excessive profits—there are two sides to every question!

Is there an answer to (5)?

Land may be got if one looks for it, but one must not expect a plot next to a station to be as cheap as that two miles or so away from one. And finally, I ask why poultry farming of all industries should be so favoured as some expect? I hope my remarks will be taken in the spirit in which they are meant. I have tried to give an impartial view. I have the welfare of the poultry industry at heart, and welcome any help that may be obtained, but let us be treated as men, and not as schoolgirls.

Yours sincerely,
"DO IT YOURSELF."

COST OF PRODUCTION.

To the Editor of "Eggs."

Dear Sir,—In the course of a feeding trial that has been carried out during this year, a figure has been arrived at which may be of interest to some of your readers—that is, the cost of producing a pullet. According to Mr. W. L. Adcock, in his letter published in the current number of "Eggs," this cost has been worked out at 5s. per pullet. I should prefer to put at **not less** than 6s. per pullet. My figures refer to only a small pen of birds, but by allowing for various increases and decreases in costs I think this figure could be applied to a larger number of pullets up to 500.

COST OF PRODUCTION OF 14 PULLETS—LIGHT SUSSEX-BROWN LEGHORN SEX-LINKED CROSS.

	£	s.	d.
Cost of batching 20 pullets from 36 eggs (20 pullets, 10 cockerels) under three broody hens	1	9	9
Cost of Feeding—14 resultant pullets at six months ...	2	5	11
Depreciation at 10 per cent. on coops, runs and houses	0	3	0½
Depreciation at 15 per cent. on wire netting	0	2	2
Rent of land	0	4	0
	4	4	10½
Average cost per pullet	0	6	1

In applying this figure to larger numbers, the following facts must be taken into account :—

(1) Lower feeding costs—as food can be bought in bulk.

(2) Lower hatching costs—e.g., cost of eggs.

(3) Increased percentage mortality during rearing.

(4) Labour costs.

Housing, fencing and rent are more exactly proportionate to the number of birds. Thus I think that the cost of producing a pullet can with safety be put at from 6s. to 7s. with this proviso, however, that exceptionable cases have exceptional costs.

Yours faithfully,
J. E. V. TYZACK.

THE LIGHTING OF LAYING HOUSES.

To the Editor of "Eggs."

Dear Sir,—Mr. Somerville is surely (shall we say) in the dark, in applying the law of inverse squares to the above subject? Strictly this law only applies to light radiating from a point, though it is practically correct in the case of a single lamp. If, instead of a single lamp, we imagine a row of lamps close together, or, say, an incandescent wire the full length of a comparatively long room, one element of the square vanishes and (except at the ends of the room) the strength of the illumination would vary inversely as the distance—not the square of the distance—from the lamps or wire.

In dealing with light coming through a window, it must be remembered that the window is not the source of the light, which, in the case of poultry houses, is the sun, either direct or reflected from the sky or cloud, or a combination of these. Then, again, the relative size of windows and room must be considered. Take, for instance, the extreme case where the room is all windows, as in a greenhouse, all parts are practically equally lighted.

In the case of the sun shining through even a small window, the light is a more or less parallel beam with equal illumination all along its course. The only case in which the law of inverse squares would apply would be that of a small hole in a flat roof on a day of uniform cloud.

In the absence of the sun a long house lighted by a row of small windows would approximate to the case of the row of lamps or incandescent wire, but the deeper the windows the nearer the approach to the greenhouse condition. It is out of the question, therefore, to give figures of the intensity of the lightings in various parts of a house unless the size of windows and other particulars are laid down.

In dealing with poultry there is one thing that I have noticed, viz., that they generally scratch with their heads to the light, and especially in small houses, this gives a tendency to accumulate the litter in the darker places, hence the desirability for windows at the back; but this may not be necessary in a long house, except perhaps towards the corners. However, the summation of the matter seems to be that a fairly deep window along the front will illuminate all the centre of the house fairly equally, but the extreme front part of the floor requires some small window low down, under the nest boxes, where such are fitted to front. If the house be fitted with dropping boards, and the area under them is required for scratching, it also should be lighted with small windows in the back, as the board tends to throw a shadow,

Yours faithfully,
W. BARBER.

WYE COLLEGE FOUR MONTHS' WINTER LAYING TEST, 1924-25.

Conducted in Conjunction with the N.U.P.S., at the South-Eastern Agricultural College, Wye, Kent.

The Test, which is of four months' duration (112 days), commenced on October 1st. It consists of forty-four pens of four birds each; all the birds are 1924 bred, and are of various pure breeds. The entries are confined to residents in the counties of Kent, Surrey and Sussex. All the birds are trap-nested, and the eggs weighed; small eggs are discounted, so as to encourage the production of strains which lay large-sized eggs.

Third Period Report (28 days, November 26th to December 23rd, 1924).

The total number of eggs laid during this period has been more than double the number laid during the previous period. 1,808 eggs were laid, which gives an average for the period of 10.27 eggs per bird. Nineteen unrecorded eggs have been laid. The average number of eggs laid per bird to date is 21.57.

The size of eggs has improved, as will be seen by comparing the following figures with those for last month:—First-grade eggs laid, 908; Second-grade eggs laid, 819; Third-grade eggs laid, 62; Unrecorded eggs laid, 19. Total all grades, 1,808.

The foodstuffs consumed during the month have been as follows:—Grain, 747lbs.; Dry Mash, 76lbs.; Wet Mash (Dry Weight), 329lbs.; total Dry Weight consumed, 1,152lbs.

Health.—The health of the birds, in spite of very trying weather, has on the whole been good. A certain number of birds have had to be brought into hospital with colds. One bird has died. Eight birds are moulting, and two have been broody.

The leading pens in each section are:—Wyandottes.—The Burrows Lea Poultry Farm, 118 pts.; Messrs. F. and T. Noame, 110 pts. Rhode Island Reds.—W. K. Martin, Esq., 117 pts.; Dr. A. Harbord, 91 pts. Light Sussex.—Miss E. McGaw, 120 pts.; Dr. A. Harbord, 97 pts. A.O.V. Heavy.—Messrs. Campkin Bros. (B.R.), 79 pts.; Mrs. Manwaring (Barnevelders), 45 pts. White Leghorns.—A. E. Hardy, Esq., 72 pts.; Major R. Simmons, 64 pts. A.O.V. (Light).—Swanley Horticultural College (Anconas), 75 pts.; Messrs. Venn Carr, Ltd. (Black Leghorns), 54 pts.

Section Egg Averages.

	Number of birds	Eggs laid. to date.	Month's Average per bird.	Average per bird to date.
Wyandottes	40	1126	12.8	28.15
Rhode Island Reds	36	818	11.36	22.72
Light Sussex	28	677	12.21	24.17
A.O.V. (Heavy)	16	249	8.68	15.56
White Leghorns	36	688	7.91	19.11
A.O.V. (Light)	20	207	6.05	10.35
All the birds	176	3798	10.27	21.57

The test is open to visitors on Wednesdays by appointment only.

NORTHERN UTILITY POULTRY SOCIETY, LAYING COMPETITION, 1924-25.

First Report, 1st November to 28th, 1924.

With one or two exceptions the birds sent to the present test were perfect in health, although, as is usual, quite a few were very youthful, whilst others had apparently laid quite a few eggs before arrival. There are a few pens of very small Leghorns, and also Wyandottes, and may be these will lay a fairly large number of eggs; there is not much likelihood of them being up to the standard required.

The weather, has, on the whole, been mild, and although a lot of rain has fallen, the balance has been of fine days. Very sharp frosts occurred on the 16th and 17th November; since then mild and open.

The health of the birds has been very good; moulting has claimed quite a number of birds; some are having a complete moult, while others the neck; and while not a large number of eggs have been gathered, the yield has risen 100 per cent. as between the first and the 28th day. None have been broody.

DUCK SECTION.

These competitors, so far, have given very poor returns, and what eggs have been laid are very poor, both in quality and size. Some that were in lay on arrival are moulting, while others were just as much too immature to do justice to their owners or themselves. All are in first-class health.

EGG PRODUCTION OF LEADING PENS (Pullets).

Section No. 1. Championship (10 Birds).—Messrs. Longworth Bros., 117 pts.; M. J. Thompson, 117 pts.; Mrs. Canning Roberts, 104 pts.; Arthur Snowden, 78 pts.

Section No 2. White Leghorns.—Messrs. F. and T. Lumb, 77 pts.; F. R. Welch, 70 pts.; Norman F. E. Kimberley, 66 pts.

Section No. 3. White Wyandottes.—Thos. Pinder, 80 pts.; James Booth, 65 pts.; Mrs. Alec Wilson, 64 pts.

Section No. 4. Any Other Variety (Non-Sitting).—Philip K. Berry, 52 pts.; M. Flaherty, 21 pts.; Ernest Jackson, 15 pts.

Section No. 5. Any Other Variety (Sitting).—F. and T. Lumb, 75 pts.; Phillip K. Berry, 56 pts.; James M. Thomas, 56 pts.

Section No. 6. Two Birds.—E. J. Stone, 27 pts.; T. H. Barker and Son, 22 pts.; Mrs. A. Stow, 22 pts.

Section No. 7. Single Bird.—H. Percy Thubron, 21 pts.: E. J. Stone, 20 pts.; R. K. Tallis, 20 pts.

Section No. 8. Small Breeders (Five Birds).—Samuel Millward, 72 pts.; William Machin, 61 pts.; E. M. Saul, 57 pts.

Section No. 9. Cross-Breds (Five Birds).—Mrs. Clara Egar, 81 pts.

Section No. 10. Ducks (Five Birds).—Chivers and Sons, Ltd., 56 pts.; Mr. and Mrs. Gwynne Evans, 22 pts.; H. M. Darrah, 10 pts.

Section No. 11. One Duck.—Captain P. C. Thompson, 1 pt.

CHESHIRE COUNTY COUNCIL EGG-LAYING COMPETITION (SINGLE BIRD TEST).

Report for Second Month (November 13th-December 10th).

Nine birds have neck moulted during this period, while Nos. 56, 70, and 96 have been broody. The leading pen in the Light Breed Section still maintains her position. Several changes of position have occurred among the Heavy Breeds, and the leading bird last month has now dropped to 10th place owing to partial moult. Nine birds in each section have not yet commenced to lay. All birds are in good health, and there have been no deaths:—

Light Breeds (all W.L.).—J. Mason, 498 pts.; Mrs. Ball, 438 pts.; E. Harrison, 407 pts.; Mrs. Ball, 384 pts.; W. J. Fletcher, 381 pts.; W. T. Griffiths, 372 pts.

Heavy Breeds.—E. Patterson (B. Orp.), 461 pts.; Mrs. Garnet (B. Rock), 447 pts.; Liverpool Sanitorium (L.S.), 439 pts.; W. T. Griffiths (W.W.), 428 pts.; G. Walley (R.I.R.), 409 pts.; Tansey Bros. (R.I.R.), 401 pts.

What our Readers think of "Eggs."

18, Casson Street, Milnsbridge,
Near Huddersfield.

Dear Mr. Newman,—I should like to express my appreciation of "Eggs," and thank you for informatoin I have gained through its columns. I began reading it about eighteen months ago, and have reared all my this year's stock on your formula, and this November I have had more eggs in one day than I had all the month last year out of the same number of pullets.

Yours sincerely,
(Signed) G. CHADWICK.

The Lodge, Copsewood Grange, Stoke, Coventry.

Dear Sir,—I would like to say how much I appreciate your helpful paper, which I have taken up again recently (about two months). I may say I have just started poultry as a business proposition in the nature of a side line to gardening, and, owing to pressure of york, cannot give the time to it which it deserves. However, so far, results are very gratifying, thanks to "Eggs."

I remain, yours faithfully,
(Signed) F. JESSUP.

21, Arthurdon Road, Brockley, S.E.4.

Dear Sir,—You may be interested to know that I have forsaken all other poultry journals, and cleave only unto "Eggs." I share the just appreciation of your other correspondents.

Yours faithfully,
(Signed) R. E. HOOK.

The Pinfold Poultry Farm, Tingewick. Bucks.

Dear Sir,—We tried all the poultry papers in turn until we found "Eggs," and since then we have been regular readers, as there was no other so useful to us.

Yours faithfully,
(Signed) R. and W. WICKENS.

Givenchy Poultry Farm, Madeley, Salop.

Dear Sir,—I should here like to express my appreciation of the good work done by the N.P.C., and also of the splendid work done by yourself and the members of your staff in the publication of "Eggs." I feel I must congratulate you on the wonderful strides you have made, and thank you for the value you give us for our 2d.

Wishing you greater success.

I am, your sincerely,
J. E. G. ASTON.

POST-MORTEMS—Continued.

K. (1) The post-mortem examination of the ght Sussex fowl showed the cause to be septic- mia, due to the absorption of decomposition oducts from a yolk that died on the stalk. The alk had by some means become twisted, which d cut off the blood supply, thus causing the death the yolk. (2) The post-mortem findings in the se of the Leghorn were highly congested con- tion of the pleura and pericardium, slight con- stion of the kidneys and the mucous membrane the proventriculus. These conditions are sug- stive of salt poisoning, but it would take a emical analysis to completely establish the agnosis.

R. G. C. Pneumonia due to the Aspergillus ngus was the cause in the case of the three- eeks-old chicks. This type of pneumonia is of urse infectious, not only from bird to bird but om infected brooders, houses, equipment, incu- tors, and also the ground. These chicks were pelessly affected, but by fortifying the re- ainder, by giving them drinking water medicated ith forty grains of the citrate of iron dissolved in ery gallon, the total losses may be reduced. In der to prevent spread and a recurrence of the fection from the equipment, every article that ese chicks have come in contact with should be refully cleaned up and thoroughly disinfected. the floorless type of brooders are in use they ould be moved to fresh uncontaminated ground d the old sites cleaned up and disinfected, either liming or by watering with strong disinfectant lution.

H. A. H. The disease that the bird was suffer- g from, and which caused the blindness, is ithelioma contagiosa, a contagious skin trouble, e cause of which is unknown. It is seldom rable, and the danger to other birds, unless the cilities for isolation are adequate, is so great at destruction is, as a rule, the most profitable. ery thorough disinfection of the premises and uipment is necessary to prevent spread; litter d rubbish should be collected and burned, and bodies of birds affected with the disease should burned and not buried or thrown out on the fuse heap. No other bird should be touched after ndling an infected bird without first thoroughly ashing the hands in strong disinfectant.

N. J. In my opinion lack of constitutional amina was the cause of the stunted growth and der-development of this bird. No signs of tual disease could be found by post-mortem, but body showed every indication of mal-nutrition. is lack of ability to assimilate and make use of rations provided would not be due to mis- nagement, but to the inherent defects of the ividual.

Some Mistakes we Make

Ladies and Gentlemen,—I must confess that I do not like the title of this paper, but Mr. Hamnett asked me to take four different subjects on this trip, and this seemed to have some possibilities of promoting discussion, which, after all, is the most interesting part of these conferences.

Now, I begin with Incubation. We have discussed the dead-in-shell problem ever since the first incubator was invented, and I cannot honestly say that we are any nearer a solution. I think the mistake we make is that we generalise too much, and do not sufficiently study our own conditions. After all you know, in the actual incubator itself, there can only be three causes of dead-in-shell—Temperature, Moisture, and the lack of Ventilation. Now we find some excitable individual writes to a poultry paper and says that he has sprinkled the eggs on the 19th day with warm water, had a wonderful hatch, and claims to have solved the problem. Several of us follow suit, some with fair success, and others fail dismally. We forget that conditions are not alike, that what may give excellent results with Jones in his attic, will not prove successful with Smith in his cellar. I remember three or four years ago an American claimed to have found the solution. He wrote that on the 19th day he wiped his eggs over with a very wet rag, and explained that by doing so he wiped off the film of oil deposited by the hen, and so enabled the chick to absorb more oxygen. Well, I published his article is "Eggs" without any comment, and a good many of our readers followed his example.

In some cases they claimed to have had better results, and in others decidedly worse, and in the latter cases I was called upon to explain.

If we had used our reasoning powers, we should have seen where the Yankee was wrong in his deductions. Take the egg under a sitting hen. The oily deposit on the egg is from the secretions from her feathers, and it is thicker in the last few days than in the first few, yet the chick does not suffer from want of oxygen. What had really happened was that the American had supplied some much-needed moisture to his eggs, and those who had been successful when following his methods had done the same, while those who had failed had already moisture enough.

Now with regard to the hen oil. We are told to get as near to nature as possible; that is quite sound advice if we read the old lady correctly. But it is going a little far to assume from the hen's feathers that nature has put it there for a particular purpose, when it is probably a mere accident. It is contended that the oil prevents too rapid evaporation, and that it softens the outer membrane. Scientists have tried to analyse it, and find substitutes for it. Some of us have tried linseed oil, margarine, lard and goose grease. Last year one of the poultry papers published an article, in which the writer advised rubbing the egg over with margarine. Apparently there were many readers who followed this advice, with the result that their hatches were a total failure. If the writer had known, or they had given the matter a little thought themselves, they would have known that the shell of the egg is porous, and there are considerably more pores over the air cell than any other part of the shell, and the purpose of these is to allow the carbonic acid gas, evolved by the growing chick, to escape, and the intake of oxygen, which is necessary for its healthy development, and which is in the same proportion as the escape of the gas. The margarine closed the pores of the egg, and prevented this, so that the chick was suffocated in the shell.

Now take makers' instructions. Some people follow them with success, while others fail utterly. To begin with the removal of the felts. One is on the 7th and one on the 14th day. If you were running your incubator in a room with a temperature of 65 degrees, which is ideal, this may apply, but assuming that the temperature of the room fell to 40 or below during the small hours of the night, it would be fatal, because the lower side of the egg would be chilled by the inrush of cold air, and there would be another reason. Warm air carries far more moisture than cold. If you keep the felts in, you conserve the moisture; if you remove them in a room with a low temperature they dry down too rapidly. It is said that if you don't do so the eggs will not get enough oxygen, but there is always far more oxygen in the incubator than under a sitting hen. Now I have said there can only be three causes of dead-in-shell, that is, of course, we are assuming that we have strongly fertilised and well-selected eggs, and we must remember that these may vary from hatch to hatch. The stock birds may be affected by climatic conditions, such as biting east winds, or other causes which will result in weak fertilisation. These causes are:—Temperature, moisture and lack of ventilation in the incubators, and to these I would add a fourth, bad storage of eggs intended for incubation. I will take the last first. You know the egg consists largely of water. This keeps the two membranes moist. If the eggs are badly stored, the moisture evaporates, the membranes become tough and dry. When they are moist they permit the escape of the carbonic acid gas, and the intake of oxygen. When they are dry they will not, and you will find the growing embryo is weakened; I won't say in proportion to the dryness or toughness of the membranes, but the vigour of the chick does depend to a very great degree as to whether that membrane is moist or dry. The less moist it is the weaker will be the chick, and the less its chance of hatching. The best temperature at which to store eggs is 50 degrees, in bran, on their sides. They do not need airing or turning.

Now coming to the question of temperature. Here I think we often make a most serious mistake. The inside temperature of eggs under hens has been taken and found to register 100 degrees, after the first 24 hours, and 101 at the end of the week. In an incubator with a suspended thermometer, registering 103 degrees, it is only 97 degrees, and in the larger machines it is as much as four degrees less than this. So there is a lot of evidence that the germ is weakened by lack of sufficient heat in the early stages. I have always had better results and stronger chicks from running my machines at a temperature of 105 degrees the first week, 104 the second, 103 the third, and that is just contrary to the advice given by makers.

Now coming to the question of moisture and overdoing it. I have never "overdone" it in a hot-air machine. There is so much ventilation that there is little fear of doing so. In the tank machines, however, the trouble really arises during the last few days of incubation, and it is due, not to the excess of moisture, but to the stagnant atmosphere. I examined 2,000 unhatched eggs for our members last spring, and in a very high percentage it was perfectly clear that the stagnant atmosphere in the incubator had been the cause of the trouble. In the tank machines you often get too much ventilation during the early stage of incubation, and insufficient in the last week, when so much carbonic acid gas is being exhaled by the developing chick.

To control moisture the best way is to be guided by the temperature of your incubator room; the lower the temperature the more moisture will the egg require, as warm air carries more moisture than cold.

We can only arrive at this conclusion, that there are three causes of dead-in-shell, due to incubating conditions, that a hard and fast rule for running the machine is impossible. We must learn to study our own conditions, and modify our methods accordingly.

Now I will take Rearing, and try and trace some of the mistakes made there. In the first place let me warn you as to the folly of allowing chicks to stay too long in the nursery drawers of the hot-air incubators. The difference in the temperature of the nursery drawer and the egg chamber is often as much as 20 degrees. If you have a crowd of chicks they will often generate enough heat to avoid their becoming chilled, but when there are only a few they get chilled, and many of them die of pneumonia.

Talking to Capt. Leeney, the S.P.B.A. expert on disease, he told me that fully 60 per cent. of the dead chicks he examined died from pneumonia. In very many cases this was due to chill, but in the main it was due to the foul air in the brooders. This opinion was confirmed by another well-known expert, Dr. Hammond, and I think we may say definitely now that this foul air is the very cause of leg weakness—not in every case, but the great majority. The S.P.B.A. have been investigating this, and some of our members have experimented with very satisfactory results. The conclusion we have come to is that we want more ventilation on the floor. This has been done with success under hovers, by making the floor of perforated zinc, or a frame of it, and placing the hover on it, covering the zinc with hay, through which the air percolates, thus the chick is sure of a constant supply of fresh air, which it does not get when upon a solid floor. I am confident that this floor ventilation of brooders and hovers is going to be one of the strongest weapons we have in the fight with disease. I am pretty sure that leg-weakness, with a very few exceptions, is not due to faults in feeding.

I have studied it very carefully for the last six or seven years, and have examined some hundreds of rations, and found it just as prevalent where special provision had been made for the Vitamins A., B., and the mineral content as in normal rations. That is a confession on my part, because I thought, when we discovered Vitamins we had found the solution of the leg-weakness problem. You know we have always advised for years getting chicks out on Mother Earth as a prevention of leg-weakness. In the brooder you get too dry an atmosphere and not sufficient oxygen.

Colonel Napier measured the humidity under an anthracite stove for me five years ago, and it was found to be only 35 per cent., as compared with 80-85 in the atmosphere.

One often sees the advice given to keep the litter dry. That is sound enough, but it is wise to avoid dusty litter, and peat moss, when it is very dusty, will often cause serious irritation of the respiratory organs. We also get watery eye from this cause, which is often attributed to colds.

I need hardly say how foolish it is to attempt to rear weakly chicks, but on many farms I have seen chicks with what is known as "big wing"; that is, the wings trailing on the ground, as if the body is too weak to support them. Such chicks should be killed and burned, as they are nearly always tubercular, and will infect the rest.

It is a mistake to feed too much wheat to chicks, as such a starchy food often causes diarrhoea. The best antidote to this is to have a hopper of dry bran always before the chicks. Too much maize will result in the laying on of internal fat. It is deficient in bone-forming properties. It is a great mistake to feed maize heavily to growing stock, for the reason that it tends to bring them into lay too early.

For egg production none of the grains are equal to it, as its fat content is of great value in forming yolks.

Chicks should be encouraged to perch as early as possible, because if they do so they will breathe a purer atmosphere than when crowding on the ground. This crowding, with the impure air they breathe, leads to weakness of the respiratory organs, autumn colds, and a predisposition to roup.

To come to the feeding of chicks. Good bran, good quality thirds, ground oats and milk are the best foods for chicks from the shell until they reach the laying stage. I would always give milk in some form for the first six weeks of their career, for nothing will give them such a good start. We are often told of the danger of overfeeding; that danger occurs only during the first fortnight of a chick's life. You cannot overfeed growing chicks if you keep them fairly active. You may feed them badly by giving an excess of such foods as wheat, maize, barley, biscuit meal, etc., all of which are lacking in the materials to form bone, and you may give them seeds which are difficult of digestion, such as millet, dari, split peas, lentils, etc., but you cannot overfeed them if they are given food on which they can develop flesh and frame, and not fat. One of the most critical times in the chick's life is when it drops its chicken feathers, and assumes adult plumage. Any neglect at that time means a poor winter egg yield. From that time onwards they want to be fed particularly well, so that when they are in their permanent quarters they should be in good plump condition, for a pullet must have fat in her body if she is to lay well. Half the pullets which start to lay late, and lay intermittently, are underfed

From the time they are in their laying quarters, onwards, I always feed maize heavily for egg production, and I feed it all the year round, and find that by doing so I have no trouble in getting birds through the moult. There is one time when you need a little care in this respect, and that is, when they are through the moult, and have not started laying again. If you are not careful then they are apt to put on internal fat.

Turning to feeding now I will tell you some of the mistakes which come to notice. A big commercial egg farmer came to see me a little while ago, and complained he was getting no eggs. We went all through the mashes and grain feed, and there was nothing there to account for the lack of eggs. Then we got down to management. I found that he gave the birds a full two ounces of grain at eight o'clock, and opened the dry mash hoppers at mid-day. That was all they got. The mistake here was in giving such a heavy feed of grain in the morning, which satisfied the birds' appetites, so that they did not want the dry mash until it was too late in the day for them to consume enough for their needs. When the method of feeding was reversed, the mash hoppers opened early in the morning, and the grain given at night, there was an almost immediate improvement in egg yield. Another mistake is made in thinking that if there is a drop in the egg yield, the birds require more fish or meat meal. I find 12 to 15 per cent. in the mash is adequate for any purposes, and in 90 cases out of 100 the drop in the egg yield is due to lack of fats, and the addition of more maize meal to the mash will speedily improve matters. Very frequently a great excess of animal food is given. This is wasteful and injurious, the birds cannot assimilate it. It throws an excessive strain on the kidneys, as is evidenced by the mustard colour of the excreta, and the black tipped combs. You will often read in post-mortem reports that bird died of "fatty degeneration," and you are advised to give Epsom salts, and cut out maize. That advice should be carefully considered, for this reason, that in all flocks there are individual birds with a predisposition to put on fat. It has been followed three times to my knowledge on commercial egg farms with disastrous results, nearly all the birds went into a moult because they were dosed and starved. An individual bird is no criterion of condition of the flock. In two other cases the same result occurred from a different cause. There were a number of shell-less eggs, and one of the poultry papers were written to for advice. They were said to be too fat—they were dosed and starved. The real trouble was that they were being given an excess of fish meal.

You may get shell-less eggs from four causes:—

(1) It is constitutional, although these cases are rare.

(2) From excess of animal food.

(3) From excess of fat in the ration.

(4) From the use of spices, and I might add one other, from the birds being excessively nervous, owing to bad management. The

> excess of fat in a ration causes shell-less eggs, not because the pullets are in an over-fat condition bodily, but because it allows her to form yolks too rapidly. There is always a much higher percentage of fat in the blood of a heavy layer than in that of a poor one. I have found this trouble to occur most frequently with heavy layers during the flush months, March, April, and May, and when it does, cut maize out of the ration for the time being. Spices are only an irritant, and cause the yolk sacs to rupture too rapidly. Fright has much the same effect. I need hardly tell you that spices are unnecessary and injurious.

Just before Christmas I had a letter from a Lincolnshire reader, who had bought 7lbs. of a wonderful tonic which would make hens lay double the number of eggs in a week, for 20s. Well he had 20s. worth, and within a week six of his best pullets died. The "tonic" was sent on to me to see what I could make of it. I found the usual ingredients—carbonate of iron, fenugreek, ground ginger, cayenne pepper, a little aniseed, and some Epsom salts. Spices have no food value whatever. The only tonic here was the iron—the others were merely irritants.

I am sure you must be getting tired, so I will only refer to Breeding and Disease.

In the case of the former it is a grave mistake to mate immature stock on either side. It is frequently said that you should have age on one side, and the advice is often given to mate 2nd season male to pullets but if the pullets are immature, mating to an old male will certainly not compensate for it. Both pullets and cockerels should be at least ten months old before they are mated. We are often advised, too, to mate cockerels which are the first to crow, but this is not always sound, for a cockerel that matures sexually very early will often not develop bodily, and is often lacking in vigour. The same remark applies to pullets. Those that lay at a very early age rarely reach full development, will lack body size, and size of egg, and breed small and weakly chicks. This is one of the most common and gravest mistakes we can make in breeding for egg production. Here, again, it is a mistake to think you can compensate for lack of size on the female side by mating a big male. I am asked pretty regularly: "Shall I mate the sire to his pullets?" This is one of the three forms of inbreeding, the others are, the dam to her sons, and brother and sister. Such matings are not to be recommended, although they are sometimes successful with very exceptional individuals. I need hardly say what a mistake it is to mate any birds which have had a bad attack of any disease.

(*To be Continued.*)

The above paper was read to a meeting of the Blackpool and District Poultry Breeders' Association.—(Ed.).

Menadews, St. Clements, Truro.

Dear Sir,—"Eggs" is packed full of information from cover to cover, and contains more practical information than any two contemporary journals.

Thanking you, yours faithfully,
(Signed) L. CHOAK.

The Scientific Poultry Breeders' Association.

APPLICANTS FOR MEMBERSHIP.

Hogben, Edward E., Milton House, High Haldon, near Ashford, Kent.
Aston, T. E., Hillcrest, Gorsley, Newent, Gloucester.
Saul, Misses E. and K., Crookhurst P.F., Allonby, Maryport, Cumberland.
Owen, Mrs. M. G., Haughton Thorne, Tarporley, Cheshire.
Frankland, Vincent, No. 8, Abner Row, Foubridge, nr. Colne, Lancs.
Druce, Alex. G., Frishinghurst, Cranbrook, Kent.
Brown, Bernard, 12, Grove Street, Wellingborough, Northants.
Mackenzie, Miss, Balavil, Concnbridge, Rosshire.
Green, Harry, 65, King Street, Hoyland, near Barnsley.
Dyke, W., "The Homestead,' Calverton, Notts.
Wilson, Mrs. Keith, The Newlands P.F., Evesham Road, Cheltenham.
Ismay, Miss E., Street Court Farm, Kingsland, Hereford.
Dixon, Geo., Neales Farm, Banks Road, Crossons, nr. Southport.
Wiliams, Mrs. B. Widger, "Claremont," South Woodham, Ferrers, Essex.
Belton, A. H., Tithe Farm, Gretton, Kettering, Northants.
Chrismas, K. A., The Bungalow, Glenridge, Virginia Water, Surrey.
Anderson, W., 1, The Crescent, Gorgie, Edinburgh.
Hayes, Miss H. M., Herbert Convaslescent Home, Alumhurst Road, Bournemouth.
West, Miss J., Beverley, Canterbury.
Passmore, C. T., Rose Cottage, Biggleswade, Beds.
Moy, F. N. Curtis, Merley Hall Farm, Wimborne, Dorset.
Colgrave, C., Colnworth, near St. Neots, Hunts.
Hunter, H., Rowston, Digby, Lancs.
Vine, Miss A. M. de, Castlederg, Co. Tyrone.
Bottom, Miss M. A., The Gates, Ashwell, Oakham, Rutland.
Poulton, R. E., Alresford, Colchester, Essex.
Porter, W. A., Rogers Farm, Moreland Farm, New Thundersley, Essex.
Leighton, W. Jas., Bellemont, Coleraine, Co. Derry, Ulster.
Kinsella, William, 45, High Street, Droylesden, near Manchester.
Jones, Miss D. E., Erw Wen, Llangollen, N. Wales.
Seabridge, B., 30, Lower Lunt, Bilston, Staffs.
Jay, T. W., Surry Cottage, Littlehampton, Sussex.
Gray, J. A. V., Springfield, Hightwon Hill, Ringwood, Hants.
Skelton, R. Potts, 283, Langsett Road, Hillsbro', Sheffield.
Keighley, Harold, Norfolk House, Beckingham, near Newark.
Reeves, Geo. W., Hazelbury P. Farm, Whitchurch, Shropshire.
Overton, H. C., Fen Street, Rocklands, Attleborough.
Gray, Miss D., Bathampton, East Knoyle, Salisbury.

TESTIMONIALS.

Saltburn by-Sea, Yorks.
11th November, 1924.

"Dear Sir,—I appreciate 'Eggs' tremendously—there is something good on every page, and it is really the **only** Poultry Paper worth reading. I have found the other papers a sheer waste of time."

Yours faithfully,
(Signed) (Miss) E. ARMSTRONG.

9, Rockvad Terrace, Dumbarton.

Dear Sirs,—Please find enclosed P.O. for 1s. 3d., being price of the book "One Man Poultry Farming." I must mention, in writing, my appreciation of your paper. "Eggs." I think it has no equal in poultry journalism. Hoping you can supply book, and wishing you every success.

I am, Sir, yours truly,
(Signed) H. P. REYNOLDS.

Ladyfield, Invergowrie.

Dear Sirs,—I have your letter reminding members of closing of financial year, also requesting support for N.P.C. Therefore please find enclosed P.O. 10s. 6d.—5s. subscription to S.P.B.A., and 5s. 6d. for N.P.C., or to be divided as you think fitting. Trusting your request meets with success well earned. Words cannot express my appreciation of your paper and work of the Society in general.

Yours faithfully,
(Signed) D. PETRIE.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, 9th JANUARY, 1925.

GRAIN AND FEEDING STUFFS.—Offerings of English wheat are rather short, and, with a strong enquiry, prices are again firmer, averaging 13s. 3d. per cwt. Prices of imported wheats have fluctuated during the week, and demand is only moderate. Trade generally is firm for both British and foreign barleys, and slight advances are recorded at Liverpool and London. Oats meet a fair enquiry and prices tend upwards. A moderate trade passes for Argentine maize at a further slight advance.

A fair trade is experienced for milling offals, especially for middlings, and prices have advanced slightly. Meals also meet an improved demand at fully last week's rates. A moderate trade rules for oil cakes, and cottonseed cakes are the turn cheaper, but linseeds have advanced at Bristol.

MILLERS' OFFALS.—Bran (British): Bristol, £9 2s; Hull, £8 12s; Liverpool, £9; London, £8 12s. Broad Bran: Hull, £10 2s; London, £10. Middlings—Fine (Imported): London, £11 2s; Coarse (British): Bristol, £10 12s; Hull, £10 10s; Liverpool, £9 15s; London, £10. Pollards (Imported): Bristol, £8 17s; Hull, £8 10s; Liverpool, £8 5s; London, £8 15s. Rice Bran: Bristol, £9 10s; Liverpool, £9 2s. MEAL.—Barley Meal: Bristol, £13 2s; Hull, £12 15s; London, £13 10s. Maize Meal: Bristol, £12 15s; Hull, £12 5s; Liverpool, £12 5s; London, £11 12s. Maize Meal (S. African): Hull, £11; Liverpool, £11 5s. Maize Germ Meal: Bristol, £12 10s; Hull, £11 10s; London, £11 5s. Maize Gluten Feed: Bristol, £12 5s; London, £11 5s. Locust Bean Meal: Bristol, £9 7s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £14 5s; Hull, £13 8s; London, £14. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £20; London, £21.

EGGS AND DEAD POULTRY.

Eggs meet a fair trade, and prices for imported show little alteration. Poultry is in short supply and prices are firm with a tendency towards higher rates, except for turkeys, which are a slow trade. English rabbits are scarce owing to the recent bad weather and are dearer.

Week-end Prices—Eggs (per 120): British: 28s 0d, 27s 0d; Irish: 24s 0d, 23s 0d; Danish: 26s 6d, 25s 6d; Dutch: 27s 6d, 26s 0d; Australian: 23s 0d, 22s 6d; Belgian: 25s 0d, 23s 0d; Italian: 22s 6d, 20s 0d; Argentine: 18s 6d, 17s; New Zealand: 24s 0d, 23s 0d.

Dead Poultry (per lb.): Fowls—Surrey: 2s 0d, 1s 8d; Irish: 1s 6d, 1s 3d; Others: 1s 8d, 1s 5d. Ducks: 1s 3d, 1s 1d. Geese: 1s 3d, 1s 0d. Turkeys: 1s 8d, 1s 3d.

EGGS.

Per Doz.—Ashford: First, 2s 7d; Second, 2s 4½d. Birmingham: First, 2s 4¾d; Second, 2s 3½d. Bridgwater: First, 2s 7d; Second, 2s 4d. Carlisle: First, 3s 0d; Second, 2s 9d. Chelmsford: First, 2s 9½d; Second, 2s 7¾d. Derby: First, 2s 9d. Dorchester: First, 2s 8d. Exeter: First, 2s 2d. Hereford: First, 2s 3d. Ipswich: First, 2s 8d; Second, 2s 3d. King's Lynn: First, 2s 6d; Second, 2s 3d. Lincoln: First, 2s 6d. Llandilo: First, 2s 3d; Second, 2s 0d. Mold: First, 2s 7d; Second, 2s 5d. Montgomery: First, 2s 0d. Newport (Mon.): First,, 2s 6d; Second, 2s 4d. Norwich: First, 2s 6d; Second, 2s 3d. Oswestry: First, 2s 8d; Second, 2s 6d. Penzance: First, 2s 0d; Second, 1s 11d. St. Ives (Hunts): First, 2s 5d; Second, 2s 3½d. Salisbury: First, 2s 5d; Second, 2s 4d. Shrewsbury: First, 2s 6d; Second, 2s 3d. Skipton: First, 2s 9d. Truro: First, 1s 11d. York: First, 2s 8d; Second, 2s 6d.

FOWLS.

Per lb.—Birmingham: First, 1s 6d; Second, 10d. Derby: First, *7s 0d; Second, *4s 0d. Exeter: First, 1s 5d. Hereford: First, 1s 5d; Second, 1s 4d. Ipswich: First, 1s 8d; Second, 1s 6d. Lincoln: First, *5s 0d; Second, *4s 0d. Llandilo: First, 1s 8d; Second, 1s 5d. Newport (Mon.): First, 1s 6d; Second, 1s 3d. Penzance: First, 1s 10d; Second, 1s 9d. Skipton: First, 1s 4d; Second, 1s 2d. Truro: First, 1s 5d. York: First, *6s 0d; Second, *5s 0d.

DUCKS.

Per lb.—Birmingham: First, 1s 0d; Second, 10d. Derby: First, *8s 0d; Second, *4s. 6d. Exeter: First, 1s 5d. Hereford: First, 1s 5d; Second, 1s 4d. Llandilo: First, 1s 8d; Second, 1s 5d. Penzance: First, 2s 2d; Second, 2s 0d. Skipton: First, 1s 4d; Second, 1s 2d. Ipswich: First, 1s 6d.

* Per Head.

(Continued at Foot of Next Column.)

“Eggs.”

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, January 14th, 1925.

CONTENTS.

EDITORIAL 19
MODERN POULTRY FEEDING 20
SOME EXPERIENCES OF SELLING EGGS FOR SITTING 21
LAINDON LAYING TEST 22
ANSWERS TO QUERIES 22
POST-MORTEMS ... ... 24 and 31
WYE COLLEGE DUCK LAYING TEST 25
DERBYSHIRE LAYING TEST 25
S.P.B.A. 25
CORRESPONDENCE 27
WYE COLLEGE WINTER LAYING TEST 30
NORTHERN U.P.S. LAYING COMPETITION ... 30
CHESHIRE C.C. EGG-LAYING COMPETITION ... 30
SOME MISTAKES WE MAKE 31
APPLICANTS FOR MEMBERSHIP 34
MARKET REPORT 35

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of “ Eggs” to their poultry-keeping friends.

Subscription to “ EGGS,” 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches. Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick. Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, “ Eggs,” 94, Farncombe Street, London, S.E.16. Telephone HOP 894.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of “ Eggs,” it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue.. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

SPECIAL NOTICE.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

Read a Few of Many Testimonials being received every week.

Dear Sir,—

Please forward on to the above address a sitting of your Black Leghorns. I was on your farm looking at your birds, and was rather taken with the condition and appearance of your pen of Black Leghorns.—H.W.W.G.

Dear Sir,—

Twelve months ago I had some pullets, and have been well satisfied in their laying.—J.F.G.

FREE LIST ON APPLICATION.

BOOK NOW.

EGGS,

L. SUSSEX.	**8/-** doz.; **60/-** 100.	Carriage Paid.
R.I. RED (s.c.). **W. WYANDOTTE.**	**7/6** doz.; **55/-** 100.	

Clears replaced once. Reduction for Quantities.

CHICKS - - **15/-** dozen; **£5 10s. 0d.** 100.

LIVE DELIVERY GUARANTEED.

T. W. STANNETT, M.S.P.B.A., N.U.P.S.,

LOOSE POULTRY FARM, Nr. MAIDSTONE, KENT.

RHODE ISLAND REDS (Boucher-Own),
WHITE LEGHORNS (F. Snowden-Ransford),
BLACK LEGHORNS (Birkhead-Own),
LIGHT SUSSEX (Own),
KHAKI-CAMPBELL DUCKS.

MRS. ATHOL STUART, S.P.B.A., P.C., B.B.L.C.,

OAKLANDS, BOXMOOR, HERTS.

Trapnested stock bred for high records combined with type and colour.

Winner Poultry Club's Herts Utility Cup, 1924, and holding to date two first positions in public Laying Tests. Catalogue sent on request.

Commander Archer, D.S.O., Eastry, writes: "I got 52 chicks out of the 52 eggs you sent me."

Breeding Stock tested against B.W.D. Eggs, 12s. 6d. & 21s. doz.; Chicks double.

E. Bostock Smith
Pedigree Utility Poultry

Pick the "Best of the Best"

from my New Mating List. Copy sent post free on request.

"Heaselands," Barham, Canterbury, Kent.

HAROLD A. HALL, M.S.P.B.A., **The Specialist Breeder of Large Egg Strain**

Utility
Rhode Island Reds
Light Sussex
White Leghorns

Consistently good Winter Records for four years, ranging from 79 to 50, and twelve Months' Records from 269 to 200.

Day-Old Chicks and Eggs, also Day-Old Pullets (Guaranteed). R.I.R. X L.S.—A First-Cross of two magnificent Super-Grade Egg Strains.

Send at once for 1925 Mating List.

Recent Successes with Eggs.

1st LONDON DAIRY SHOW (R.I.R.).
1st NORTHAMPTON (Brown).
1st WELLINGBOROUGH (4th year in succession).
1st RUSHDEN.

WOLLASTON HALL, WELLINGBOROUGH, NORTHANTS.

THE SCIENTIFIC POULTRY BREEDERS'

FARM ACCOUNT BOOK

PRICE: POST **6/-** FREE

Compiled by ALFRED BROWN Esq. Published and Sold by the S.P.B.A., Rudgwick, Horsham, Sussex.

EGGS

THE OFFICIAL ORGAN OF THE

Scientific Poultry Breeders' Association

WEDNESDAY, JANUARY 21st, 1925.

Editorial.

BREEDING.

Continuation of Paper read at a Meeting of the Lancashire Breeders at Preston.

The fact that the external characteristics of the layer and non-layer differ so widely is surely an indication that the constitution does determine whether a hen shall be high or low fecund (I am not alluding to a genetical constitution). It does determine whether she shall develop size, feathers, fat or eggs, in large or small numbers. Mr. Hadlington, the New South Wales Government expert, made the following experiments :—

> "A Leghorn cockerel was mated to six Leghorn hens and six Game hens. (2) A Game cockerel was mated to six Leghorn hens and six Game hens. The Leghorn cockerel was the son of a dam which laid 293 eggs in 12 months."

The result of the flock testing of the progeny from these matings was as follows :—

> "Leghorn-Game cross laid an average of 112.2 eggs per hen ; Game-Leghorn, 117.4 per hen ; Pure Leghorn, 193.5 per hen ; Pure Game, 51.7 per hen.

It would have been interesting and helpful had the individual records of the progeny been available.

What are we to gather from these records? Are we to conclude that the sire was unable to transmit his dam's fecundity to the progeny of the Game hens, but was able to do so in the case of the Leghorns, because the genetical constitution differed? I suggest that the dam's fecundity was not transmitted in either case. What I think happened was this : The progeny of the Leghorn-Game cross gave better results than the pure Game, because they partook of the physical constitution of the Leghorn male, which enabled them to give fuller expression to a character which they had inherited from their dams. In the case of the Game-Leghorn cross, what occurred was that the female progeny was unable to give full expression to the character (fecundity), which they had inherited from their dams, because it was INHIBITED by the physical constitution of the Game male which they shared with that of their Leghorn dams.

I have never heard it suggested that a low-fecund hen had a less perfect ovary or oviduct than a highly-fecund one. In effect, then, I have said that :—

(1) All hens are fecund.

(2) The dam does not transmit her fecundity through her sons.

(3) That the degree of fecundity depends upon the physical constitution, which may be favourable to, or may INHIBIT, its fullest expression.

(4) That the dam can transmit her fecundity to her daughters direct.

(5) That they do not inherit high fecundity, but only the power to give full expression to the character—fecundity.

It will be realised that the selection of the male would be as important as ever, as if his physical constitution differed widely from that of his mates, the daughters' production will vary widely, as they partake of the constitution of the dam or sire.

There are three factors of primary importance to the breeder for egg production. The first is constitutional vigour. I take the following from the "Daily Mail" on their first-cross laying test :—

> "The justification of this test is the fact that many of the pure breeds have become increasingly liable to disease, more difficult to rear, and less productive. First-cross birds are hardier than those of pure breeds, and certain first crosses have proved very prolific of eggs."

That is utter nonsense, and the report of the National Test at Bentley just concluded proves that it is so.

Anything which weakens the parents constitutionally will affect the constitution of the descendants. If we breed from pullets which have commenced laying at from 4½ to 5 months old, we are courting disaster, because they cannot build up a constitution when the food which should be making frame is spent in egg production.

There is, too, the question of the selection of the male, and, although constitutional vigour is inherited from the female, it is a mistake to use a very early maturing male, because he will never be fully developed, will lack size, and will breed weakly chicks. The next point is size. This is most important. We know, for the reasons given, that high fecundity is opposed to size, but this can be to a great extent controlled by the breeder. When size is below the average of the breed constitutional vigour is lowered, because it can only be due to one of four things—disease, production at the expense of development, immature parents, or any unfavourable environment. We get then the small egg, the low hatchability and the unrearable chick. Size of the breeding stock should be medium for the breed, care being taken on the female side that it should not be below the average; on the male side, quality is of greater importance—that is to say, that if the choice lay between a male a little below the average, and one a little above, and the former showed the greater ability, he should be given the preference.

On the question of performance—the actual production. The S.P.B.A. standard of 40 or more eggs in any 90 consecutive days between October 15th and January 15th, is a fairly safe one, with a minimum production of 180 eggs for the full year, but you cannot lay down hard and fast rules for breeding.

INCUBATION.

The following paper was read before the Poulton Poultry Breeders' Association on January 7th :—

Ladies and Gentlemen,—Capt. Cadman, lecturing at the Harper-Adams' Conference two years ago, told us that the average percentage of fertile eggs hatched in the Egyptian egg ovens over a period of two years, and dealing with millions of eggs, was round about 90 per cent., and this in spite of the fact that the eggs are often brought many miles on camel back; that the methods employed are still those which were used a thousand years ago. The operator has no thermometer, but tests the temperature of the egg by holding it to the eyeball, and the fertility by holding it to a gleam of sunshine which finds its way through a crack in the mud wall.

The problem of the dead-in-shell has been discussed by the scientist and the practical man for years past, and every kind of improvement has been tried in incubators, but I think I should not be far wrong if I said the average hatch of fertile eggs, taking the country through, does not exceed 65 per cent., as compared with 90 of the Egyptians. There is one factor we must take into account. There, the fowls exist under perfectly natural conditions, and the average egg production would hardly exceed 50 per bird.

I think, when discussing this question, we are apt to forget the egg itself, and think only of the incubator. It is a well-known fact that hatchability is an inherited factor. No two hens' eggs are equally hatchable. I have records of a pen of Light Sussex, 10 hens, the hatchability of the individual hens varied from 38 to 92 per cent. Two full sisters, with winter records of 62 and 68 eggs, gave 47 and 88 per cent. respectively of the fertile eggs. Then there is the question of selection of eggs and storage. Very large eggs do not hatch well because of the high percentage of moisture they contain; very small ones because the yolk is either insufficient to nourish the chick, or there is a deficiency of albumen; thin-shelled ones, because there is too much evaporation, with the result that the membrane becomes dry and tough. Breeders of Barnevelders tell me that they find more difficulty in hatching their eggs than those of any other variety. That is because the close texture of the shell is more resistant to the carbon-dioxide exhaled by the developing chick. I need hardly say why badly shaped eggs do not hatch well.

Now turning for a moment to the nutritional side. There is every reason to believe that a high percentage of dead-in-shell is due to the fact that there is a deficiency of lime phosphate in the egg itself. This, you know, is necessary to enable the chick to form bone. If breeding hens are not well supplied with green food—and we know the difficulty in obtaining this in the early months of the year—then there is most likely to be a deficiency of lime in the egg, with the result that we have a poorly developed chick, too weak to hatch. I would suggest that breeding stock should be given alfalfa or clover meal regularly in the mash, for both these foods are rich in lime. Or, failing this, the following mixture should be given with the mash at the rate of 5 ozs. to every 10 lbs. :—

60 parts steamed bone meal.
20 parts powdered oyster shell, or limestone dust.
20 parts common salt.

Coming to the storage of eggs intended for incubation, I am convinced that one of the most prolific causes of dead-in-shell is the way in which they are stored. Nearly every day the question comes, "How long can I keep eggs for incubation?" That is not the point. Every day you keep an egg it deteriorates, and the chances of its hatching are lessened, and the chicks which do hatch are weakened. You know that a very high percentage of the egg consists of water, and that the shell is porous. This permits the expulsion of the carbonic acid gas, exhaled by the growing chick, and the intake of oxygen which is so necessary for its development. The two membranes, when moist, also allow the escape of the one and the intake of the other, but when dry this cannot take place, and if an egg is exposed to the air for any length of time, this moisture is evaporated, and they become dry. The developing chick is weakened in proportion to the moist or dry state of these membranes, for the intake of oxygen and the expulsion of the carbon-dioxide is in proportion to their dryness or moisture. I would just say here, that the advice to rest eggs sent by rail before placing them in the incubator is mistaken, and that experiments with large numbers of travelled eggs sent hundreds of miles by rail proved that those which were at once placed in the incubator on arrival hatched better than those which were rested for 24 hours.

Now with regard to storage, the best temperature

which to store them is about 50 degrees Fahr.
should never be below 30 degrees nor above 70.
prefer to store them on their sides in bran. They
› not require airing, and, although it is advised
turn them once a day, I have never found any
-effects from not doing so. We must try and
›t away from the idea, which is fairly prevalent,
think, that a hen hatches every fertile egg. It
fairly common to get 12 chicks from 12 eggs
ıder a hen, and we are inclined sometimes to base
ır expectations on this, and to argue that the
ult is in the incubator if we do not get the same
rcentage; but I fancy that the average hatching
ıder hens is not so much higher than in incubators
we are apt to think it is. Two years ago I was
a large farm in the South where many thousands
chicks are hatched yearly by hens, and in going
to figures I was very much astonished to find
at the hen, after all, was not so very much
perior to the incubator.

Now, I want to say one word on the question of
n-oil. The advice to get nearer to nature is
und, but it is not always easy to read the old
dy correctly, and this has been very clearly
emplified in the case of Hen-oil and Hatchability.
ıe oil secretions of the hen's feathers impart to
e eggs under a sitting hen a thin film of oil.
arned men have spilt much ink on this oil. An
tempt has been made to analyse it. It has been
ggested that it has a chemical effect on the
ell of the egg—that is, it softens the outer
embrane and prevents too rapid evaporation;
d we have tried substitutes for it, such as Goose
ease, Butter, Olive Oil, Linseed Oil, not to speak
lard and margarine. Then we have gone to the
her extreme and dressed the shell of the egg with
etic Acid and Vinegar, and it has all been use-
ss. We may safely say that no external appli-
tion is likely to have the least effect on the hatch-
ility of the egg. It is all very well to say that if
u place an egg in vinegar for a certain number
hours the shell will dissolve, and then to argue
at if you dip your finger in vinegar and run it
und the centre of the egg it will assist the chick
hatch. The application of that small amount of
ıegar will have no effect whatever, and the action
the shell of the egg is from within and not
thout. As to your Goose grease, Linseed Oil,
any other grease you care to supply, the only
ect is that it fills up the pores of the shell, with
e result that there can be no escape of carbon-
›xide from the growing embryo, and no intake of
ygen necessary for its development, with a re-
lt that it is suffocated in the shell.

Some years ago opinion was freely expressed
at the most prolific cause of dead-in-shell was
e lack of oxygen in the incubator, more venti-
ion was advised and longer airings. We were
d that the chick perished because of the lack
oxygen, or from an excess of carbon-dioxide,
we gave longer airings and removed felts earlier
th rather worse results than before.

In 1916 I wrote a series of articles on the subject, and drew attention to the habit of the Brush Turkey, which placed huge mounds of decayed vegetable matter, scraped a hole in the bottom and left its eggs to be hatched by the heat generated by the decayed vegetable matter. Obviously, under such conditions, the carbon-dioxide must be present in very large quantities, and there must be a sufficiency of oxygen or the embryo could not develop, but it is some indication of the small quantity required.

Acting on this idea I advised my readers not to remove felts until the eggs began to pip, and then only to remove one, and to stop cooling. Miss Mary Balfour conducted an experiment for me without cooling, and in that particular case she had nearly a 90 per cent. hatch. We argued for many years that a hen leaves her nest to cool her eggs. That is endowing her with reasoning powers. It was on this basis that the advice has been given to cool eggs by every incubator manufacturer since the days when the first "Hearson" was put on the market. As a matter of fact, a hen does not leave her nest to cool the eggs, but to satisfy the wants of nature. After this article appeared an experiment was conducted in America with over 3,600 eggs, half of which were cooled and the other half were not cooled. The result was that those which were not cooled gave the better hatchability, and there was a lower mortality during the first six weeks of the chicks' existence. There is no evidence that the developing embryo derives any benefit from cooling, but it is possible to produce evidence that it does not.

Consider the advice to cool for 15 to 20 minutes during the last week of incubation. Would you take a day-old chick from a brooder temperature of 90 degrees and subject it to one of 50 for 20 minutes and expect it to live? Of course you wouldn't. Then why, in the name of common sense, take a growing embryo, whose development depends on an equable temperature, from one of 103 and plunge it into one of 50—or as very often happens, lower than that? If you believe it is a case of airing and not cooling, then is it logical to close down the incubator on the 19th day, when the embryo is exhaling more carbonic gas, and requires more oxygen than it did a week previously? If we take the analysis of the air under a sitting hen and compare it with that of the incubator we find that under the hen there is an average of 31.93 parts of carbon-dioxide in 10,000 parts of air, while in the incubator there are only 9.90. There is this vital difference. In the incubator the carbon-dioxide comes largely from the eggs, under natural conditions much of it comes from the hen's body, so that we really have not much reason to worry over lack of oxygen in the incubator. Where oxygen has been introduced artificially, the hatches have failed.

(To be continued.)

Some Mistakes we Make

(Continued.)

Selection plays the most important part in successful breeding, and it is a bad mistake to have a bird in the pen without a sound reason for its being there.

To come to Disease. The scientists will tell you that the fundamental causes of Disease is Malignant Bacteria, and they will name the different Bacilli for each disease. As practical men, I think we shall wage the fight against disease more successfully if we say that the fundamental causes are the conditions which lower the resistant power of the birds, and make them a ready prey to the germs of disease, of which, I believe, every fowl, even healthy birds, are carriers, and our real fight with it must be on the lines of breeding from vigorous, healthy stock, appreciating the necessity of well-ventilated brooders and houses, of cleanliness, particularly in regard to insect life, of nutrition, and especially as regard this, a plentiful supply of fresh green food, which goes far to correct any errors in the actual ration.

I have got myself into hot water by saying that I have no faith in vaccines and serums, or drugs, as preventives of disease, but I am not going to withdraw from that position. We know no more about roup and its treatment than we did 40 years ago. It is not more readily cured by modern remedies than it was by those in use in those days. I have really come to the belief that the real cause of roup is impurities in the blood. This is aggravated by improper feeding, perching in badly-ventilated houses, and by colds. If it is not so, why do we get the offensive smell with roup, which we do not get with an ordinary cold? Of course, the first step must be to remove the cause. The best treatment, I believe, is to administer sulphur internally, give copper sulphate in the drinking water, and feed as much green food as you can get the birds to consume. You might wash the mouth and nostrils out with vinegar and water, or any disinfectant to make the discharge less thick, but this is only treating symptoms, the real remedy is the sulphur, and the plentiful supply of green food, after the cause has been removed.

I just want to emphasise the necessity as one means of preventing disease, of isolating, for at least a week, all stock that you may buy, or have returned from shows or laying tests. I have known some very bad outbreaks occur from neglect of this precaution. It is useless to treat gapes if the birds remain on infected ground, the same remark applies to Bacillary White Diarrhoea and Coccidiosis. In the former the only chance of stamping out the disease is to kill all sickly chicks, and burn their bodies at once. There is no cure, and this is the only means of preventing further infection. With Coccidiosis, which generally attacks chicks at three weeks or a month old, there is no possible way of fighting it successfully unless you kill all sickly chicks at sight, and keep on moving to fresh ground, because the infection is through the excreta; by this and giving 15 grains of powdered catechu to the gallon of drinking water, and allowing them nothing else to drink, you have a chance.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

"Buff Rock" (Platt Bridge). The sample of dried yeast you send is of fair average quality. I much prefer to see it in the mealed form rather than flaked. With regard to your second question, I am sorry, but I cannot give you the information you require.

"One in doubt" (Newton Abbott) writes that last year he purchased breeding stock from a certain firm and he paid a good price for same. The results have been very poor. The adult birds lay poorly, the hatch was poor, and the resultant pullets, although laying, lay small eggs, and not many of them. Now he wants me to state, through these columns, if this breeder is one to be relied upon, or whether he is to blame the season or his management, and whether he should do well to continue with this strain or get rid of them. I have to form my judgment on the fact that they have a morning feed of grain of two, wheat, oats and maize, and an evening feed (wet mash) mixed with a certain proprietary laying meal, sharps, clover meal and 10 per cent. meat meal. Now, will "One in doubt" just put on his considering cup for a moment and think whether it is possible for me to express an opinion as to the management of his birds from just what he has told me in the feeding? With regard to the firm in question, I believe them to be fairly reliable, but, not having seen the stock, not even knowing the breed, or how they were reared or the stock birds fed, it is impossible for me to say anything more. What I cannot understand is, if a meal is advertised as a "laying meal," why the addition of sharps and clover meal and 10 per cent. meat meal is necessary?

E. G. (Orston) sends a sample of meat meal, hich, at 17s. 6d. per cwt., is very good value for e money. It is clean and sweet, and should ıswer her purpose well.

C. C. (Hereford) mated some Wyandotte pullets st year to a R.I. Red male to get sex-linkage. ıis year he wishes to mate them to a Wyandotte ale, but is told the chicks will not be pure Wyan- ottes, the taint of the cross will remain. (2) Has een told that "scaly leg" is hereditary, and ants to know if it is so, and how to treat. (3) ants to know if I can give him an example of version. In answer to your first question, C. C. ıe Wyandotte chicks will be pure, and will show influence of the previous mating. It is the **ary** which is fertilised, and not **the hen**, so you ill see it is impossible for the previous mating to ive any influence on the progeny of the second.) Scaly leg is not hereditary, the parasite which uses the condition is found in the soil; some rds appear immune. Wash the legs with warm apy water, and apply a strong solution of Izal o or three times. (3) As an example of version, we may take the Blue breeds, such as e Andalusian and the Blue Leghorn. Here it is gular and definite. All have originated from ack and White Parents. When blues are bred gether we get 25 per cent. Black and 50 per cent. ue. You may get reversion from the omission of y character. Example—Single-comb offspring Rose-comb parents.

Puzzled (Dublin) asks if his Black Leghorn llets which have dark legs, are pure bred, and w he can breed to counteract. (2) What is the use of "Roach" back. (3) Opinion on sample alfalfa meal. A pure black bird with pure yellow gs has never been bred yet. If you have yellow gs there is white in under-colour, in flights or in l. With dark under-colour you always get dark gs. Your best way to counteract it would be to ate to a male with plenty of white in tail or flights. Roach back is congenital, or may be e to an accident; such birds are no good as eeders. (3) The sample of alfalfa meal is a very od one, above average quality.

G. B. (Sevenoaks) hatched cross-bred chicks December 31st, and the mortality has been ceedingly high. There is a whitish discharge m the vent, drooping wings, generally mopey pearance. For the first few days the chicks did y well, but on the tenth day five died, eleven next day, and nine the following. He suspects W.D., and asks what he shall do. The chicks ve been given biscuit meal scalded, dried off h sharps, bread and milk, and a dry chick feed, nple of which he encloses. There is not much go upon, but I do not think B.W.D. was the use, the deaths would have taken place within or three days of hatching had such been the e.

The feeding is hardly sufficient to explain the trouble, although the dry chick feed contains an excess of millet. Lentils are also present, and neither of these seeds are easily digested and are better omitted from any mixture. I cannot be very definite, but suspect the real cause of the trouble to be chill. It would be advisable to add 40 grains of citrate of iron and quinine to the gallon of drinking water, and allow the chicks nothing else to drink.

A. G. (Bedford) wants to know how the "air cell" is formed, and what is the cause of double-yolked eggs. Lining the shell of the egg is the shell membrane which is double, being made up of two layers, an outer thicker and an inner thinner one. At the broad end of the egg these membranes tend to separate, and thus develop between them a space into which air find its way. Eighty-six per cent. of the white of the egg is water, and as this shrinks by evaporation the air space gradually increases in size. Double-yolked eggs are caused by two yolks being released very quickly one after the other, reaching the egg membrane, secreting part of the oviduct at the same time, and being incorporated in the membrane. Over-stimulating feeding of highly-fecund pullets often result in double-yolked eggs.

E. W. H. (Tralee). The formula you give is quite suitable for egg production as mixed, and really depends upon the quality of the ingredients. I do not think, as at present constituted, there would be any advantage in adding an additional quantity of Sussex ground oats as the mash is already "strong" enough. If the parts are by measure it would indeed be too "strong," and I would advise the reduction of the maize meal by one measure and the fish meal by $\frac{1}{4}$ measure.

G. B. (Wickford) writes he has six Wyandotte hens in their third year. These birds are non-broody, and he would like to get some of their daughters. He has an unrelated cockerel with them, from non-broody birds; a fine heavy bird, mid-March hatched, but he doesn't mate with the hens, and he wants to know what he can do. The hens have been over the moult over a month, but are not yet laying. He also asks what feeding I would recommend for them to produce fertile eggs. The hens won't mate, G.B., until they start laying, then I think you need not be under any anxiety in that respect. You would be wise, however, to see they are not in an overfat condition. The following formula will be a good one for breeders: 1 lb. alfalfa meal, 1 bran, 4 good middlings, 1 maize meal, 1 Sussex ground oats, half dried yeast, and half meat and bone meal or fish meal. You could use this wet or dry.

G. W. (Harebreaks) asks if it is possible to breed from sex-linked birds and still get the sex-linked cross. The answer to this question is "Yes." He also wants a book or set of papers giving illustrations of the different breeds. We would recommend him to write to the Editor of the "Feathered World," 9, Arundel Street, Strand, London, W.C.2, for "British Poultry." The price is 2s. 6d. post free. This will give him all the information he requires. In reply to his question as to my opinion of the Barnevelders as layers, whether they are equal to the Leghorn or Wyandotte, the answer is "NO." As a breed they are not such good layers as either the White Wyandotte or the Leghorn.

Doubtful (Ramsgate) has a friend who told him that a first-cross Leghorn-Sussex pullet laid double-yolked eggs at five months old, and he asks whether I believe it. He also wants a good wet mash for breeding stock. See reply to A. G. (Bedford), "Doubtful," and ask yourself then why this pullet should not have laid double-yolked eggs at five months old. A good wet mash for breeders would be: Bran 1 part, alfalfa meal 1, biscuit meal 1, S.G.O. 1, sharps 4, meat and bone meal half part. Parts here are by measure. Do not scald the bran, but use it to dry off the other ingredients with.

P. E. T. (Skipton) asks me to describe symptoms of low vitality, and to give a formula for a dry chick feed, and the cheapest possible mash for layers. In answer to his first question, signs of low vitality are: A dull listless eye, inactivity, wings inclined to droop, plumage "stairy," poor appetite, poor development of comb, which lacks the bright colour of a vigorous bird. In the male it has often a tendency to hang over, the wattles are usually poorly developed, and the lobes small and creased. The formula for dry chick feed is: Finely-cracked wheat and maize 15 parts each, split groats 10 parts, canary seed 3, and hemp seed 2. The cheapest laying mash I can give is: Bran 2 lbs., fine middlings 4 lbs., maize meal 2 lbs., soya bean meal ½ lb., and meat and bone meal ½ lb.

J. L. (Wigan) bred from pullets in 1922, 1923 and 1924, is now afraid that he is losing size, and wants to know whether I think that is due to breeding from pullets. There may be two causes: (1) Breeding from immature pullets. There is little danger of losing size when breeding from mature well-developed pullets in their prime. (2) Breeding from precocious pullets, those which have laid at 4½ to 5 months old in light breeds, and 5 to 5½ months in heavies. I think I must leave J. L. to decide for himself now.

POST-MORTEMS.

C. E. H. Acute phosphorous poisoning was t
cause in the case of the pullet, and I am of t
opinion that the others succumbed from the sar
poison. The amount of poison taken must ha
been very large, as the inflammation was gre
and the odour overpowering. The lungs a
kidneys were in a condition of apoplexy, which
rather unusual in these cases. In less acute cas
where poisoning by phosphorous is suspected, t
grains of potassium permanganate in one oun
of water should be administered, and repeated
half an hour, as this drug, by the oxygen that
contains, oxidises and renders the poison inert.

E. T. B. The post-mortem examination of t
seven weeks' chick showed the cause to be doul
pneumonia, due, in my opinion, to chill. Tl
bird was very backward in its development, and
lack of constitutional stamina would make it
easy victim to adverse climatic conditions. For
grains of the citrate of iron dissolved in eve
gallon of drinking water might do much to fort
the remainder, and help them to resist su
troubles and feather up faster.

C. McG. Pneumo-mycosis, due to the Asp
gillus fumigatus, was the cause in the case of t
three chicks. The lungs were a mass of tubercl
which shows a heavy infection. The continued w
and damp have been most favourable to the grow
of the fungus, and thorough disinfection of t
equipment is necessary to prevent a recurrence
an outbreak. Forty grains of citrate of iron
every gallon of drinking water should help to to
up the remainder, and assist them to resist t
invasion of the fungus.

J. C. The four small chicks and the larger o
were all subjects of what might be called "broo
pneumonia." This type of lung trouble may ar
from chilling, due to sudden drops of temperatu
draughts, foul air, due either to imperfect venti
tion, or to poisonous fumes given off by the heati
apparatus.

A. A. B. The cause in the case of the five thi
weeks' old chicks was pneumonia. A care
search of the lungs failed to find the tuberc
which are characteristic of the pneumonia caus
by the Aspergillus fungi, so that chilling is in
probability responsible for the losses. Forty gra
of the citrate of iron and quinine to the gallon
drinking water would tone the remainder up a
might increase their resistance to the effects of
inclement weather.

H. Y. Thank you for your letter dated Janu
4th, 1925, and the information about the hen.
I am investigating B.W.D., and especially

effects on the ovary of recovered subjects, any information along those lines is most valuable. Sorry I fell into the common error of calling a hen a pullet, but the mistake (?) would have no bearing on the post-mortem lesions. Reports are not made through the paper, although the Editor reserves the right of publishing anything that he considers of general interest to readers. This was done solely in the interest of members, as the delay in the case of infectious diseases more often than not rendered the information too late to be of any use in checking spread.

J. L. The post-mortem examination of the hen showed the cause to be uraemic poisoning due to the blocking of the kidneys and their ducts with urates. The yellow diarrhoea you mention is an effort by nature to effect the discharge of effete matters, which the kidneys are not doing. I should advise fasting these birds for twenty-four hours, and then giving for a week a daily dose of glauber salts, fifteen grains per head, dissolved in a little hot water, and mixed in the morning mash. A good supply of green stuff should be provided, and exercise enforced by burying the grain ration in deep litter.

R. A. D. The post-mortem examination of the two chicks showed the cause to be pneumo-mycosis in the case of the smaller one, and pneumonia in the larger. The tubercles associated with pneumo-mycosis or aspergillosis of the lung were very numerous in the first case, but the most minute search failed to find them in either lung of the larger bird. A puzzling feature in the case of the larger one was a minute puncture of the skull, such as might be made by a darning needle. Whether this was so or not the lung condition was sufficient to cause death. To prevent spread energetic measures, in the way of disinfection of all equipment, brooders, incubators, etc., will be necessary, and to strengthen the survivors, and help them to resist the invasion of the fungus, I should advise dissolving forty grains of the citrate of iron and quinine in every gallon of drinking water, and continue thus medicating the water until no more deaths from this cause occur.

M. B. Impaction of the duodenum with matted and twisted up grass and fibre was the cause in all three cases. Prevention, of course, is the only remedy, as you will see by the enclosed "rope" how impossible it would be for it to pass through the rest of the intestine.

"Mametz," Brundall, Norfolk.

Dear Sir,—Although only a member of about six months' standing, I must congratulate you on the soundness of the principles and the excellent spirit of the movement. I have kept poultry all my life, but must say that, thanks to the books sent me when I joined, and by following your excellent publication, "Eggs," I have learnt more since joining than the whole previous period, and my results this year following your methods of feeding, housing, etc., are most gratifying.

Yours faithfully,
(Signed) KEITH PARKER.

Description of the "Ulster" Brooder

By Lieut.-Col. F. S. MACRORY.

BROODER HOUSE.—This is an open-fronted "Hanson" type converted hen house, measuring 60 ft. long by 10 ft. wide. It is divided into five compartments, each 12 ft. by 10 ft. The boiler house forms a sixth compartment, added on to one end of the house. The house is floored with wood, the boiler house with cement, and the latter floor is about 18 in. lower than the wooden floor. The hot-water pipes (1 in.) run from the boiler right down the five compartments. In the centre of each compartment they are coiled to form a brooder area about 2 ft. 6 in. square. On top of the coils a detachable galvanised hover is placed. The pipes rise about 2 in. in every compartment, so that the "hover" piping is about 8 in. above the floor in the compartment next the boiler, 10 in. in the second compartment, 12 in. in the third, 14 in. in the fourth, and 16 in. in the end compartment. The scheme of working is to place the day-old chicks (up to 250) beneath the lowest hover, and move them on each week, replacing them by the next hatch (I hatch once a week during the spring). The chicks are thus four weeks old when they reach the last compartment, and five weeks old when they are moved into outside coops (fireless) and touch Mother Earth for the first time.

The ventilating platforms consist of a simple wooden framework, about 3 ft. square and 3 in. deep (I use slater's laths to make this frame). For week-old chicks this is covered with fine mesh wire (such as is used for incubator trays). For the older chicks the wire is replaced by wooden slats about ¾ in. square and ¾ in. apart, nailed across the frame. These latter frames are also raised a few inches off the ground by nailing short legs to the four corners. The small chick frame has ½ in. holes bored in the sides, to let air pass through. A light coating of hay or straw is placed on either the wire or slats, and on this the chicks rest. I usually spread some fairly dry earth beneath the frames, renewing this every few days. (I have not found it necessary to use a platform for the first week, as very young chicks are so light and fluffy that I do not think they sweat under the brooders, and hence do not contract leg weakness till well over a week old. That, at least, is my theory).

Should the litter in a chicken house tend to become damp, I have found nothing so good as sprinkling a little air-slaked lime through it at intervals.

The Simplest Method of Securing a Living from Hens.

By **LESTER SPURGEON.**

A question that comes my way not infrequently, and has come from several quarters recently, is in effect this: What way would you go about poultry farming with a view to securing a living if you made a fresh start, and in view of your past experience? It has occurred to me that my somewhat condensed answer might prove of interest to our readers.

The reply, somewhat crudely put and condensed, is this:—

I would go in for egg farming, pure and simple, and insist upon its being as simple as that complex work can be made. I would cut out, as far as possible, every side line, such as table birds, the selling of stock, hatching eggs and chicks. I would not trap-nest, nor sell three-months old pullets, or any pullets that I could possibly find housing room for. I would stand by White Leghorns of a hardy strain, and no other breed. I would house the laying stock in as large units as possible. I would hatch every egg I could lay hands on during the months of March-April. I would attend to the incubating and the rearing of chicks myself, and not until the birds were two-three months old should anyone else have charge of them. I would work all-out during the most important four months of the year, and rest away from the sight or sound of hens as long as possible, and until the time arrived for the autumn housing of the pullets. The rearing season is the most important, but I know only too well how easily well-reared pullets can be spoilt for egg production by careless attention just prior to their laying period, and during it in winter.

Very few novices can be made to realise that the simplification of this physically-tiring work pays in the long run, if one is out for a living from the work, and not merely as a hobby.

Having a life-long interest in poultry, when the time came I was glad of the opportunity of attempting all the various side issues the work can hold. First there was the trap-nesting—and, in spite of my statement I would not trap-nest if out for egg farming purely, it must be done by someone, and it does not end at recording and releasing birds. Then there is the selling of stock, etc., and the endless correspondence that follows, and the attempt at getting better prices for cockerels by fattening with its consequent killing and plucking.

A great stumbling block in this work with poultry is that it appears almost impossible to refuse money for hatching eggs and chicks when perhaps money is needed, and one generally falls by allowing to pass out of one's own hands produce that ought to be retained, and would pay hands over later on. Hatching eggs are always wanted by others just when we need them, as are chicks that ought to be retained for the replenishing of our own laying houses.

Of course, with egg farming more capital is necessary than if starting with small odd pens of birds and trying to do a bit of everything, and a novice would not perhaps be well advised to risk housing large flocks in one unit unless he were blessed with a very acute sense of observation. Speaking for myself, I would house in units of 1,000, even though it meant a slightly-reduced egg output, since the convenience of being able to go into a house holding 1,000 head of stock that could be attended to without going outside until the work was completed, appeals to me very strongly.

For this egg farming it is unnecessary perhaps to point out that large numbers of egg producers must be kept in order to return anything like a living for two people. I feel pretty confident that the maximum number of adults for two sensible workers to manage without much outside assistance is 2,000, necessitating the replacement of 1,000 or thereabouts pullets each season. If two sensible workers' entire energy were concentrated upon the attention two units (extra, say, to breeders) calls for, and all they had to do in connection with the disposal of produce was to pack and despatch eggs and "culls" to market, life would be far more agreeable than the everlasting attention to endless detail that all the side issues of poultry can mean. One can gain a very fair estimate of the quantity of eggs that can be produced in a given period, and a good market secured without much difficulty.

I have had long talks with experienced poultrymen from the States of America who have carried on egg farming there and in our Colonies, and one live man told me, after a thorough investigation of our markets here, he would be glad of the opportunity of starting here, and of working here with our stock and under our conditions, and would be prepared to accept contracts for the selling of eggs at a far less price than we are prepared to accept, and then make a handsome return for himself. The American and Colonist are tuned-up to undertaking most of the work themselves instead of paying others to do it for him. Many of the men work hard for five years, and save enough, sell up, and so take a year's holiday and start afresh elsewhere. If the American goes in for egg farming, he does and nothing else. Let others do the marketing of birds he does not want. I feel sure we poultry people as a whole (exceptions included) are too "niggling," and in making for the shadow, lose the substance.

THE UTILITY DUCK CLUB AND THE NATIONAL UTILITY POULTRY SOCIETY.

NATIONAL DUCK EGG-LAYING TEST, 1924-25.

Report for Second Period, 29th November to 27th December, 1924.

The majority of the ducks have now become accustomed to the new method of trapnesting, and every day a number are starting to lay.

The new Test grounds are in a very exposed position, and the exceptionally severe wind storms disturb the ducks to such an extent that they fly right off the ground for short distances.

The size of egg shows marked improvement on previous years, very few being under 2 ozs.

One duck died during month; the Ministry of Agriculture post-mortem report stated that death was due to peritonitis. Otherwise the health of the flock is excellent.

EGGS PRODUCTION OF LEADING PENS.

Section 1.—Championship (5 Ducks).—Chivers & Son (K.C.), 161 pts.; Johnson, R. A. & A. M. (W.R.), 111 pts.; Carrington, H. B. (K.C.), 110 pts.

Section 2.—Khaki Campbells (3 Ducks).—Bell, Miss Harrison, 58 pts.; Woodiwiss, Mrs. G., 46 pts.; Hunter, Miss L., 45 pts.

Section 3.—Indian Runners (3 Ducks).—Carrington, H. B.(F. & W.), 44 pts.; Godsmark, H. S. (W.), 91 pts.

Section 5.—Any other Breed (3 Ducks).—Gardner, F., 88 pts.

Correspondence.

ECONOMIES.

To the Editor of "Eggs."

Dear Sir,—Reference your Editorial of last eek's issue. If your correspondent looks back November issue of "Eggs," 1924, he will find ıere, not a balance sheet but the cost of feeding ıd rearing a pullet to laying stage and onwards. can give him the figures :—Cost of rearing pullet laying stage 8s. 6d ; cost of food for twelve onths 8s. 6d., and on an average of 150 eggs ıis gave the writer of the article approximately gross profit over cost of feed of 6s. 6d. for a ullet, and 4s. 6d. for a hen, giving, what is enerally considered obtainable for egg farms, 5s. er bird.

Since that time it costs 2s. more to feed each ird per annum, which brings the gross profit down 3s. At least that is what it has cost me for good many months, also on top of this eggs are d. less per dozen this winter than last, so where we make **any** profit? Why should an egg ırmer publish his balance sheets? Does a grocer any other business man make his balance sheets ublic?

Let our correspondent find out, by being a practical farmer—he'll know then. I and many more ave had to. Were your correspondent a business an he would not put forward such a preposterous request," neither would he deem it necessary to e balance sheets of egg farms for proof of profits. is easy enough to find out. Let him obtain rear-ıg cost, feedings costs and egg yield, which can extracted from "Eggs" if one is a regular ader, and that is all that is necessary to find out it is a paying proposition or not.

You, Mr. Editor, speak disparagingly of many egg ırmers' methods—waste, etc. Also I noticed Mr. oovey lately mentioned that poultry farmers, as a ody, were poor business folks—he instanced cases buying third hand, bad payers and such-like. I ıggest that bad buying was only in cases where ady money was "non est."

To buy meal and corn is one of the easiest things poultry farming, and I cannot conceive how any oultry farmer—however small—would buy from a iller or corn dealer whose prices are even 1 per ent. above another, unless the cash isn't avail-ble.

I should like to reply to Mr. Toovey (as I sup-ose he will read this article) thus :—That there re a good many of us who possess sound business nowledge and who are truly economical and ractical men—**feeling the pinch**—and when the ıck has been good.

It comes to this, that if it costs another halfpenny per week per bird to feed to-day than previously, the egg farmer is that much out, unless his produce sells at a higher price, which is not so but exactly the reverse.

I have 400 layers ; feeding cost this December over last December show a rise of about £4. I have marketed this month 360 dozen eggs at an average price of 3s., whereas last December the price was 3s. 3d., which means another loss of £4 10s., making a total deficiency over the previous year (the same month) £8 10s., and no amount of brain waves, even had one been a "Pellmanite," could have stayed that loss or difference. I have come across many definitions of the words "optimist" and "pessimist." My definition today is an "optimist" is one who says it pays—a "pessimist" who is one that says it does not.

Yours faithfully,
"EX-MATLO."

"EAT MORE EGGS" CAMPAIGN.

To the Editor of "Eggs."

Dear Sir,—I desire to direct your attention to the fact that a shopkeeper in Bowburn, Durham, was convicted and fined £30 for selling as custard a powder composed of coloured maize flour. This is the standard composition of "custard" powders. A report of the conviction appeared on page six of the "Daily Mail" of 6th November.

I consider that public attention should be extensively drawn to the case, and the difference in food value between real custard and custard substitute made clear. I am strongly of the opinion that a knowledge of the food values on the part of the consumer would lead to a greatly increased use of eggs in milk puddings.

Yours faithfully,
ADAM MILLAR.

CENTRALISED POULTRY SERVICE.

To the Editor of "Eggs."

Dear Sir,—Recently Mr. Morton Nance invited remarks upon his new-fangled plans for a Poultry Service, and his response is to characterise those "who obliged him" as of the era of the sailing ship, and confutes them with a new idea of the relative movements of the earth and sun! Then we may be content to leave him with the remark that he is mistaken in supposing there is anything new in his ideas, for alas, the promotion of shares has been only too frequent in this country. On second thought, however, perhaps he is entitled to claim novelty for his notions, since the deliberate development of poultry is new.

Yours truly,
C. HESKETH.

YORKSHIRE SPACED BOARDING.

To the Editor of "Eggs."

Dear Mr. Newman,—I am writing to know if you have ever come across the use of "Yorkshire Spaced Boarding" for fowl-house roofs? If you are not familiar with the material, it is ordinary ¾ in. or 1 in. sawn boards with a ¼ in. groove, ¼ in. from each edge; the roof is formed of these boards laid from the highest to the lowest point with ¼ in. space between each board.

I have seen this in use as barns near Sheffield, and I believe it was mentioned as a possible use for fowl-houses in an issue of the "Journal of the Ministry of Agriculture" about a year ago. What is your opinion of its feasibility for this purpose? If you have no data to go on, you might perhaps put this letter in your correspondence column to see if any reader has had experience with it. I think it would perhaps help to solve the ventilation problem, besides letting in a certain amount of roof light. The farmers I questioned about it told me that very rarely, if ever, does rain get through, all is carried off by the two grooves in each board. Unfortunately, I did not ask what happened with snow.

If this can be used, there would be the saving in felt.

Yours faithfully,
J. HOPE ALLAN.

BRAN AS LITTER.

To the Editor of "Eggs."

Dear Sir,—Mr. H. C. Turner's experience of bran as litter, under the hover, appears to be similar to my own. When I wrote you my experience of it I had not paused to consider the probable cause of leg weakness in chicks. One, however, concludes it arises from conditions under the hover. It may be poor ventilation, or caused by the too warm and dry boards coming in contact with the chicks' feet, and having an injurious effect on the nerves and muscles of their feet and legs. The fact that it is usually the early hatches which suffer most point to this, as they spend more time under the hover as the nights are longer. The same applies to a certain extent to the bright and dull seasons.

Now, Sir, when we use bran as litter under the hover, we have for the chicks' feet a nice soft, cool cushion, which completely insulates their little feet from the wooden (and in some cases, even iron) floor of the hover. Everything the bran contains is good for them. **It contains twelve per cent. water,** at least until it has been there long enough to become dry and harsh, when it should be removed and renewed. This should be done before it resembles sawdust in appearance, or the effect of not doing so will quickly make itself apparent on the chicks. That is why I think is too much dryness and warmth to the feet c the chicks causes the trouble. Straw chaff, whic I believe is generally used under the hover, is muc harsher than bran to the chicks' feet; it is mor wood-like, dry and bright, and **may hold and reflec** more of the heat to the feet of the chicks—henc the trouble. Anyhow, the breeding season is upo us now, and some of our readers may try bran a an experiment. It will not be a costly one, an perhaps later in the season they may let us kno the result. All Mr. Turner says about the chick thriving has been my experience. My Wyandottes hatched the 24th March and 17th April this year were culled at 30 weeks, and all not laying o showing signs of it were sold in the local market The remainder have an average of 42 eggs pe bird to the 31st December. Their eggs average 3s. 1d. per dozen in the market, very few bein under 2 ozs. The birds were reared on you formula, and have had nothing else. One pulle laid 85 2⅛ oz. eggs to the 31st December. Thi bird was shown at a local Utility Show, when sh had laid 63 eggs in 73 consecutive days, and got V.H.C. I wonder what the 1st, 2nd and 3rd priz birds had done?

I am, Sir, yours faithfully,
C. H. JEANES.

LIGHT SUSSEX x MARSH DAISY.

To the Editor of "Eggs."

Dear Sir,—In your number of October 18th I referre to this sex-linked inheritance cross, and in view of th various recommendations which have been made i the poultry press, the following trap-nest records ma be of interest:—

Ring Number.	No. of Eggs, Oct., Nov., Dec.
25	66
32	48
37	56
129½	48
140	53

Some of the pen of 40 birds were late in startin but, notwithstanding this, the average, including rather large number of unrecorded eggs works out just over 40 per bird, and the January figures, so fa are even better.

My Marsh Daisy Cock that I used last year was n one of my best, but the experiment I made has co vinced me that the cross is quite sound financially.

A point which the Marsh Daisy cockerel has ov the Brown Leghorn seems to me the more profitab outlet for the cockerels which mature extremely fa and sell well. The cockerel chicks all come out whi and the hens brown, so there is no difficulty separating the sexes immediately on hatching. Th pullets lay a very fine opalescent-tinted egg well u to weight.

Yours faithfully,
FRANCIS J. HEMELRYK,
Vice-President, Marsh Daisy Club.

POST-MORTEMS—Continued.

A. S. B. The post-mortem examination of the W. Wyandotte pullet showed the cause to be abscess formation in the air sacs, with extension of infection into the lungs. The condition is caused by the irritation set up by a parasite named the Cytodites nudus. This parasite is frequently found post-mortem, but only in very heavy infestations are symptoms during life observed. Thorough disinfection of the premises is about all that can be done to limit its activities, as treatment is of little service. It is claimed by some authorities that sulphur mixed in the food will destroy the parasite, as sulphur is, to some extent, eliminated by the lungs, but it is very doubtful if this is in any way effectual.

R. The post-mortem examination of the four chicks showed the cause to be Bacilliary White Diarrhoea in each case. This, as you know, is an infectious disease, and for which practically nothing can be done in the way of treatment. There are many ways by which this disease may gain entrance to a flock, the germs may be present in the egg itself, if the latter is laid by a "carrier" hen, incubators, brooders, day-old chick boxes, etc., are all possible sources of infection. I should advise the destruction of any chick that appears to be ailing, the strict isolation of the remainder of this particular hatch, and the very thorough disinfection of the incubator, brooder, and all equipment with which they have come in contact, before again using them for another hatch. If any survive, it would be better to feed them for the table, rather than utilise them for breeding, as it is almost certain that a percentage of them would be "carriers," and so keep the trouble going.

A. The chicks forwarded for examination were the subjects of Bacilliary White Diarrhoea. Treatment for this infectious disease is unavailing, and more attention should be paid to preventing its spread and recurrence in future hatchings by taking every precaution in the way of isolation and complete disinfection *of all* equipment, and especially the incubator and brooders. Immediate destruction of any ailing chick will prevent, to some extent, further infection of its associates, some of whom may survive if they remain uninfected until they are eight or ten days old.

N. J. Post-mortem examinations on the two chicks showed the causes to be Pneumonia in the case of the small one, and Cholera in that of the larger. Both of these diseases are infectious, and with high mortalities. The incontacts of each should be rigidly quarantined, and thorough and continuous measures of disinfection carried out. Care should be taken not to spread to the remainder of the flock by means of boots and equipment. To treat the flock in which the pneumonia has occurred, dissolve forty grains of the citrate of iron in every gallon of drinking water, kill and burn visibly affected birds, and continue with the medicated water until no more deaths occur. The cholera incontacts, which should be isolated by themselves, should get water to drink, medicated by dissolving fifteen grains of sodium sulpho-carbolate in every gallon. The same measures as to destruction and disposal of the bodies by burning apply as in the case of the pneumonia pen, and the same precautions to prevent spreading by the boots, etc., should be taken.

S. Acute inflammation of the kidneys was the cause, but I could find nothing in the contents of the crop or stomach of a poisonous nature in the way of plants or grasses, so must conclude that the trouble has arisen from some bacterial cause in connection with the food. Fish or meat meal that has become stale, or was infected during the process of manufacture, has been known to produce such results, as have mouldy or spoiled grains and offals. I should advise a careful examination of the foodstuffs and the rejection of any that appear to be spoiled. To get rid of any possible injurious matters that may remain in the system, and at the same time lower tension, fifteen grains of Epsom salts should be given to each bird daily, either mixed in the mash or in the drinking water.

THE NATIONAL EGG-LAYING TEST, 1924-25.

REPORT FOR FIRST MONTH—1st to 28th Nov., 1924.

The two most striking, as well as the most satisfactory features noticeable on the arrival of the test birds, were their all-round good health and the general improvement in breed type. On former occasions it has unfortunately been considered necessary to return a few pens, on the score of ill-health, or for some other reason, but this year not a single pen was rejected. The improvement in type was very marked amongst the White Wyandotte, Rhode Island Reds, and the Light Sussex.

There was, however, a lack of condition noticeable in quite a number of birds, no doubt owing to the sunless breeding season.

Many of the most forward were far too thin and poor, and this would to some extent account for the large number which, after laying a few eggs, have stopped and fallen into a moult. Others were immature, and are not likely to lay for some weeks yet.

Egg production during the month was adversely affected, not only by this moulting, but also by the slowness with which many of the birds, although showing every sign of maturity, are coming on to lay.

The number of eggs laid during the month was 12,175, an average of 5.78 eggs per bird. The average in the championship section was 6.57 eggs. The lowest daily collection was 372 eggs on the 3rd day, and the highest (496 eggs) on the 27th day of the month.

A decided improvement in the average size of eggs laid is to be reported—the percentage of first grade eggs reaching 76.6 as against 6.35 per cent. in the corresponding month last year.

The greater improvement in that respect is shown by the White Wyandottes, while the White Leghorns (a breed regarded as producers of good-sized eggs) show a serious falling off in size for the breed, their percentage of first grade eggs being as low as 71.5. This falling off is entirely a matter of strain, and is largely confined to those pens in which loss of size in the birds is also shown. The weather during the month was wet and dull, and not favourable to egg production.

As regards the general health of the flock, there was nothing serious, but the usual seasonal type of feverish cold was very prevalent, and this had its effect on egg production, and was also responsible for some of the moulting which has affected a large number of birds, but it has in most cases been confined to the head and neck.

EGG PRODUCTION OF LEADING PENS.

Section 1.—Championship (10 Pullets).—Johnson, R. A. & A. M. (W.L.), 144 pts.; Metcalfe, G. B. (R.I.R.), 142 pts.; Crabtree, W. (W.W.), 113 pts.

Section 2.—White Leghorns (5 Pullets).—Thomson, D. V., 96 pts.; Weeks, Fred W., 84 pts.; Saul, E. M., 80 pts.

Section 3.—Black Leghorns (5 Pullets).—Anderson, Lady, 87 pts.; Garrett, Roland, 83 pts.; Clay, Mrs. Mignon E., 70 pts.

Section 4.—Any Other Light Variety (5 Pullets).—Lemon, H. Lynden, 54 pts.; Hunter, H. R. (W. Bresse), 52 pts.; Berry, P. K. (An.), 45 pts.

Section 5.—White Wyandottes (5 Pullets).—Alexander, A. K. Spiers, 90 pts.; Knight, Mrs. E. M. L., 88 pts.; Price, James C., 88 pts.

Section 6.—R.I. Reds (5 Pullets).—Berry, H. J., 95 pts.; Fraser, Lady Dorothy, 75 pts.; Sanders, F. & A. H., 75 pts.

Section 7.—Sussex (5 Pullets).—Rossall-Sandford, F., 107 pts.; Brooksbank, Tom, 79 pts.; Alston, Mrs. M. G., 67 pts.

Section 8.—Any Other Heavy Variety (8 Pullets).—Cohen, Lady Waley (Barn.), 65 pts.; Rolling, William (Barn.), 65 pts.; Kemp Gee, A. M. (Bf. Rks.), 65 pts.

J. N. LEIGH.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

A LANCASHIRE TRIP.

Mr. Bostock Smith accompanied me to Lancashire on a short lecturing tour, he speaking on the business side, while I took as my subjects: Breeding, Nutrition, Incubation, and "Some Mistakes We Make." We had every reason to be pleased with our reception, and shall not easily forget the kindness and hospitality of our Lancashire friends.

Beginning at Preston, where we had such a crowded audience that many were unable to obtain admission, we went on next day to Poulton, the day after to Kirkham, and finished up on the Friday at Blackpool. One thing always impresses me in Lancashire, and that is the kennness of every one. There is no doubt that there poultry-keeping is on business lines. A visit to the Lancashire Egg Producers' Depot at Preston confirmed this. This society, formed by a few enterprising poultry-keepers in the district, is now dealing with a quarter of a million eggs weekly. We watched with the greatest interest the methods of packing, testing, and grading. It was all admirably managed, and we could not but feel that if such methods were adopted in other parts of the country, or, rather, became universal, we should fight the importation of foreign eggs far more successfully. Even in Lancashire, however—in which, as far as the poultry industry is concerned, there is better organisation than in any part of the country—the cry is still for "organisation," and at Blackpool an egg merchant in the audience got up and protested strongly as to the condition in which English eggs are marketed. When one hears all the stories that are told, and is acquainted with the facts, it seems almost certain that a day will come when legislation will be needed to protect the producer who markets his produce as it should be marketed, clean and fresh, from the irresponsible individual, to call him by no other name, who sends his eggs to market in such a filthy condition that the foreigner trades on it, and importers favour the foreigner because he would never be guilty of such folly.

SUBSTITUTE FOR TRAP-NESTS.

A member has written to-day telling me that he intends to place on the market an arrangement whereby a hen herself will record every egg she lays, and so render the trap-nest wholly unnecessary.

I cannot here enter into details, suffice it to say that the patent is affixed to each hen, does not interfere with her functioning, and stamps the egg with any desired number when she has laid it. Fuller details will follow later, and I am perfectly sure that our members will await them with curiosity. Assuming the appliance proves in every way satisfactory, it will come as a boon and a blessing to all of us.

I do not know whether any calculation has actually been made of the cost of trap-nesting a large flock of birds, but I think many people's eyes would be opened if they realised what it actually amounted to.

I have seen three kinds of automatic trap-nests; that is to say, where the hen automatically recorded her own egg, and, although I cannot say whether they were successful or not, I can say most emphatically that the price was uneconomical.

Of course, we have had these ideas before, and we want to see them in practise before we are able to decide whether they are of any practical value or not. Fuller details will be published directly I receive them.

EGG PRESERVATIVE.

When in Lancashire I was shown a new Egg Preservative, which seems to be full of promise. I do not think that I had better go beyond that statement at present. Further, if the selling price is that quoted to me, it is surely economical, as it would amount to less than 1d. per dozen eggs, and storage would be on much more simple lines than at present, while it would do away with some of the disadvantages of lime-water and water glass. It has been strongly recommended by Mr. Alty, Mr. Fred Fielding's partner, who has used it in California with the most satisfactory results.

While on this subject, one might surely impress upon members what a greatly increased profit per head would result if they stored their eggs in sufficient numbers during the "glut" season. I hardly think this is realised to the fullest extent. If selected, infertile eggs are properly stored when prices are at their lowest, one can always rely on a very considerable profit if they are sold on a rising market, say in early November, and it is well to watch the Market Prices when selling. I know of one member of the S.P.B.A. who lost a considerable sum of money by holding his eggs too long; the slump came, and it meant very many pounds out of his pocket.

Mr. Bostock Smith dealt with the Marketing Side during our trip in Lancashire together, and some of his remarks would undoubtedly be appreciated by our members.

WEST SUSSEX POULTRY SOCIETY.
WINTER LAYING TEST, 1924-25.

Report for Third Period, December 7th to January, 1925.

Figures are Eggs and Points respectively:—

Class 1. Section A. Heavy Breeds.—H. W. Homewood (R.I.R.), 139, 130; H. J. Willis (Pen 2) (W.W.), 132, 118; H. W. Homewood (L.S.), 110, 110; Burrows Lea P.F. (W.W.), 100, 94; H. Rowntree (Pen 1) (W.W.), 85, 85; E. Thompson (R.I.R.), 81, 81.

Class 1. Section B. Light Breeds.—Burrows Lea P. Farm (W.L.), 115, 98; Hudson Bros. (W.L.), 86, 86; W. E. Saul (W.L., 83, 72; H. Rowntree (B.L.), 64, 61; Mrs. C. R. Harding (Pen 1) (W.L.), 59, 59; H. Hood and Sons (B.L.), 65, 57.

Class 2. Section C. Heavy Breeds.—Mrs. Wiltshire (W.W.), 54, 26; E. Thompson (R.I.R.), 16, 12; Hudson Bros. (W.W.), 8. 8.

Class 2. Section D. Light Breeds.—Hood and Sons (B.L.), 17, 17; Hood and Sons (W.L.), 16, 16; Hudson Bros. (W.L.), 16, 16.

APPLICANTS FOR MEMBERSHIP.

Small, Kenneth, C. H., "Oak Cottage," Bannister Green, Felstead, Essex.
Richards, Alan, Church House, Sutton-by-Dover, Kent.
Beveridge, P. Skinner (B.Sc.), "Glendum," The Middleshade, St. Andrews, Fife.
McConnell, Alex. D., Bellary, Monkton, Ayrshire.
Clegg, H., 86, Marsland Road, Sale, Cheshire.
Grimshaw, J. C. H., Hunter' Hall, Mixenden, near Halifax.
Boyle, Maj. A. R., White House, Stoke Hill, Guildford.
Williamson, J., 35, Up. St. Columbas Road, Drumcondra, Dublin.
Hams, E. E., 32, Manor Road, Itchen, Southampton.
Moss, Miss M. D., Beecholme, Station Road, Crowborough.
Lewis, T. J., Smithfield House, Smithfield Road, Pontardawe.
Hinks, G. W., Hill Crest, Shelford Road, Radcliffe-on-Trent, Notts.
Burns, John, Sandbed, Fenwick, by Kilmarnock, Ayrshire.
Eccles, C. E. E. S., Stentwood, Duneswell Abbey, Cullompton, Devon.
Corbett, R., 114, Jerviston Road, New Stevenston, by Holytown, Lanarkshire.
Lee, R. G., Upwell, Wisbech.
Motherselle, A., Stibbeur Lune, Donyatt, Ilminster, Som.
King, W. A., Fochabers P. Farm, Fochabers, Morayshire.
Flint, Jas., Portland Road, Selstone, Notts.
Davies, Mrs. Brookside, Staveton, Glos.
Hollins, H., The Bungalow, Gravel Hill, Shedfield, near Botley, Lancs.
Medcalf, G. R., 115, Barry Road, East Dulwich, S.E.22.
Renyard, W., Meadow View, Scaleby, Carlisle, Cumb.
Lyons, H. J., Enysleigh, Eddington Lane, Herne Bay.
Plummer, E. S. W., The Mill House, Pounds Bridge, Penshurst, Kent.
Chapman, C., "Hillside," Buckwyn's Estate, Billericay, Essex.
Forsyth, J., Marshfield, Leixlip, Co. Kildare.
Jones, John D., 20, Glendower Street, Dowlais, Glamorganshire.
Collins, John Fred, 14, Panmure Street, Monifieth, Forfarshire.
Airey, J. E., 18, Grange View, Millhead, near Carnforth.
Smith, T., Hill Top Farm, Hanging Langford, Salisbury.
Prescott, Richard, 346, Manchester Road, Tyldesley, near Manchester.
Tuxworth, F. A., East Street, Ashburton, Devon.
Hardman, John, Gornall's Farm, Holmeswood, Rufford, near Ormskirk, Lancs.
Fowler ,Arthur, Hilltop Egg Farm, Hilltop, Meanwood, near Leeds.
Collingwood, Cyril, "Melpost," Hawstead, Suffolk.
Clover, Sydney, Hightown Farm, Ringwood, Hants.
Cadman, Charles, New Pool, Sidbury, Bridgnorth.
Hudson, Austin, The Flatt, Kirby Thore, by Penrith, Cumb.
Whiteoak, Harry, The Grange, Kildwick, Keighley.
Dowsett, Rol. H., "Wellsmead," Canwell, Sutton Coldfield, near Birmingham.
Sibeth, Ed. F., The Weka Poultry Farm, Newton Abbot, Devon.
Colman, G., 7, St. Stephen's Crescent, London, W.2.
Wood, C. J. Carey, "Woodlands," Brockenhurst.
Murgatroyd, Mrs A. H., Banksgarth, Riddlesden, Keighley.
Naylor, S., 75, Stoney Croft Lane, High Utley, Keighley.
Metcalf, Harry, Moss Carr, Long Lee, Keighley.
Nicholson, J., Cragg Cottage, Moss Carr, Long Lee, Keighley.
Fernie, Thos. J., Fettykil Lodge, Leslie, Fifeshire.
Gething, Miss D. M., Quarry Poultry Farm, Chilmark, Salisbury.

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES.

A Council Meeting will be held in the Master Builders' Rooms, Mount Street, Preston, on Saturday, January 31st, 1925. Chair to be taken at 3 p.m. Professor Willard C. Thompson, B.Sc., Director of the National Poultry Institute, has kindly promised to be present at the meeting.

AGENDA.—1. Minutes of the last Council Meeting. 2. Letters and communications. 3. Balance Sheet; 4 Auditor's Report (both unavoidably held over from annual meeting). 5. Show Committee's Report. 6. Accounts. 7. Election of Sub-Committees, Educational and Propaganda, Laying Test, Finance. 8. Recommendation of Egg Prices at Garstang and Preston. 9. Any other business.

E. COLLIER, Organising Secretary.

The following Sub-Committees are to meet at the same place at 2 p.m. :—

Educational and Propaganda.—Messrs. J. R. Hull, W. Grove, T .Edmundson, J. Dewhurst, J. Whalley, W. Fletcher, and W. A. Hall.

Laying Test.—Messrs. J. Edmundson, J. C. Barnes, T. Hudson, H. Hayes, W. Hamnett, J. E. Morris.

Finance.—Messrs. W. Hamnett, F. J. Butterworth, J. P Willacy, and S. Marson.

THE UTILITY INDIAN RUNNER DUCK CLUB.

The Annual General Meeting of the Utility Indian Runner Duck Club was held on Wednesday, December 10th.

It was agreed that the Club should be re-organised and put in thorough working order.

The following officers were elected:—President, Mr. H. B. Carrington; Vice-Presidents, Mr. T. R. Robinson, Col. Sanback; Hon. Secretary and Treasurer, Mr. C. C. Chittenden; Committee: Mr. Barnes Reeve, Miss Harrison Bell, the Hon. Joan Ashton, Miss Crauford, Capt. Long, Messrs. H. C. Godsmark, A. M. Johnstone, R. Appleyard, and W. R. Partridge.

The objects of the Club are to look after the interests of all Utility Indian Runner Ducks by guaranteeing classes at Shows, offering prizes at laying tests, by endeavouring to improve the standard of the Indian Runner Duck; at the same time to retain its wonderful utility qualities, and by bringing all breeders together in order that they may further the interests of the breed in any way that may prove beneficial from time to time.

A Year Book is being prepared, and will shortly be published. It is hoped that all breeders who have not yet joined the Club will do so as soon as possible.

The Minimum Subscription is 5s. per annum.

All communications should be addressed to the Hon. Secretary and Treasurer, Mr. C. C. Chittenden, Frog Lane Farm, Rotherwick, Hampshire.

NORTHERN UTILITY POULTRY SOCIETY LAYING COMPETITION.

Second Report, 29th November to 26th December, 1924.

All the month the weather has been very wet and windy, and, with the heavy rains which have been nearly continuous and high winds, the competitors have not had a very happy time. Seven days have been fine. Heavy fogs have also been experienced, but no frosts. The health of the birds has been good, less than two per cent. requiring medical attention. The yield of eggs has risen gradually, but the quality (on the whole) is not nearly so good as last year, the fault not being confined to any particular breed. There are quite a number of fresh moulting cases. Five birds have been broody.

DUCK SECTION.

These competitors have not come up to expectations, yet only fourteen out of the total having started to lay, in spite of the fact that the weather conditions have been ideal for ducks. One or two pens are far from laying yet. All are in good health. Figures are Eggs and Point respectively:—

Section 1. Championship (Ten Birds).—M. H. Thompson (W.L.), 252, 252; Messrs. Longworth (Br. W.L.), 243, 243; Arthur Snowden (W.L.), 232, 232.

Section 2. White Leghorns.—Norman F. E. Kimberley, 145, 145; Messrs. F. and T. Lumb, 145, 145; F. R. Welch, 138, 138.

Section 3. White Wyandottes.—Thomas Pinder, 173, 173; James Booth, 138, 138; Mrs. Alec Wilson, 130, 130.

Section 4. Any Other Variety (Non-Sitting).—Philip K. Berry (B.L.), 99, 99; M. Flaherty (A.), 74 ,74; Sidney E. S. Burnett (B.L.), 44, 44.

Section 5. Any Other Variety (Sitting).—F. and T. Lumb (R.I.R.), 161, 161; Philip K. Berry (R.I.R.), 132 ,132; Tom Gardner (R.I.R.), 130, 130.

Section 6. Two Birds.—E. J. Stone (W.W.), 66, 66; Mrs. A. Stow (W.L.), 52, 52; Sam Lord (W.W.), 43, 43.

Section 7. One Bird.—Frank Heyworth (W.W.), 42, 42; R. K. Tallis (W.W.), 41, 41; H. Percy Thubron (W.W.), 41, 41.

Section 8. Small Breeders (Five Birds).—W. Machin (W.L.), 157, 157; E. M. Saul (W.L.), 144, 144; Samuel Millward (W.L.), 139, 139.

Section 9. Cross-breds.—Mrs. Clara Egar (B.M. x W.W.), 175, 175.

Section 10. Five Ducks.—Mr. and Mrs. Gwynne Evans (K.C.), 93, 93; Chivers and Sons, Ltd. (K.C.), 85, 85; Wilson Beattie (K.C.), 51, 51.

Section 11. One Duck.—Oscar C. Brown (K.C.), 19, 19.

C. G. SKIPPER.

National Poultry Council.

The quarterly meeting of the National Poultry Council was held in the City Hall, Cardiff, on Thursday, January 15th, the President (Mr. Tom Newman) being in the chair. There was only a fair attendance of delegates, many being unable to be present owing to ill-health.

The Lord Mayor (Alderman W. H. Pethybridge, J.P.) accorded the delegates a very hearty welcome. In the course of his remarks he said that the enormous imports of poultry and eggs made one think furiously. There seemed no good reason why the whole of our requirements could not be produced in this country. We were pouring our money into the pockets of the foreigner; that was obviously bad business. He hoped that the Council would do such good work that the production here could be so greatly increased that there would be a considerable diminution in these imports. Referring to backyard poultry-keeping he said that although it was desirable to encourage this, the Council should take steps to assist the local authorities in preventing its being done under such conditions as would be likely to be a menace to the public health.

The President proposed a hearty vote of thanks to the Lord Mayor, which was seconded by Mr. Hamnett, and carried with applause.

Before the business of the meeting began, the President, on behalf of the Council, extended a very hearty welcome to Professor Willard Thompson, Director of the National Poultry Institute, and assured him that he would receive the loyal support and cordial co-operation of every member of the Council.

Professor Thompson, in acknowledging the welcome, said that it was very gratifying to him to be so heartily received, and the assurance of their co-operation was especially pleasing to him.

EXECUTIVE COMMITTEE REPORT.—In the absence of the Chairman (Mr. A. T. Walker), owing to ill-health, the report was presented by the Secretary, and adopted, on the proposal of Mr. J. H. Dowden, seconded by Mr. Leslie Williams.

EXECUTIVE COMMITTEE REPORT.

The Executive Committee beg to report that two meetings have been held since the last Council at Wye College, October 1st, 1924.

Chairman.—In consequence of the illness of Mr. A. T. Walker, election of Chairman was deferred from the Salisbury meetings. In the earnest hope that Mr. Walker, who has served the Council in so many ways since its initiation, is now on the way to recovery, he was again unanimously reappointed as Chairman.

Affiliated Societies.—No applications for affiliation have been received since the last meeting. Considering the large number of Breed Clubs and Local Societies which have given no support to the work of the Council, the Executive hope that every opportunity will be taken by members of the Council and others to bring before these the importance of more complete organisation of the Poultry Husbandry, otherwise the Council is unable to exercise the influence which would otherwise be open to it. The Secretaries will be ready on application to supply information and literature with this object in view.

The Executive regret to report that two Breed Clubs (the British Minorca Club and the Rhode Island Red Club) have withdrawn from affiliation. Unless greater support is given by Breed Clubs it may be necessary to reconsider the representation accorded to them upon the Council.

Patrons.—The following patrons have been elected since the last meeting:—Messrs. Blaksley and Blyth, Pedigree Poultry Farm, West Moors, Dorset; Captain Selwyn M. Day, The Old Down, Kempshott Village, Basingstoke; Miss Helen Crawford, N.D.P., Appleby, Scunthorpe, Lincs; Mr. C. N. Goode, The Haydens, Bletsoe, Bedford.

Sub-Committees.—Reports will be presented by these for consideration by the Council. In view of the new Parliament and the promises made by members of the Government, the Parliamentary Committee is taking steps to secure the early re-introduction of the Merchandise Marks Bill, providing for the Marking of Imported Eggs, and its passing into law. It is further suggested that further efforts be put forth to prohibit the importation of dried and liquid eggs containing preservatives which are deleterious, as investigations have shown that these are dangerous to public health.

In view of the fact that the appeal sanctioned at the Wye Council, as recommended by the Egg and Poultry Consumption Committee, for a preliminary fund of at least £500 for the purpose of launching an "Eat More Eggs" Campaign, has met with a very small response, in spite of the generous co-operation and publicity of the Poultry Press, the Executive cannot regard the time as having arrived for undertaking such a project.

It suggests, therefore, to the Council that, without delay, steps should be taken in all producing districts to organise the preservation of eggs from the times of maximum output to those of greater scarcity, by (1) individual poultry-keepers, (2) local societies, (3) combines of producers, or (4) traders, in accordance with the conditions prevailing. In this connection, there are two facts which are of great importance, namely, that the taking off the market whatever surplus there may be has the effect of steadying prices, and that preservation is highly profitable as indicated by the fact that co-operative societies in this and other countries acknowledge that their profits are mainly derived from the sale of preserved eggs.

Laying Trials Committee.—In accordance with the resolution adopted at the Wye Council, copies of the Rules for Registration of Laying Trials then passed were at once issued to the various Laying Trials in England and Wales, in response to which a number of applications for such registration have been received. It is, therefore, necessary for the National Poultry Council to appoint a Sub-Committee to report upon applications and advise it as required, upon the basis as agreed upon, namely, National Poultry Council, 6 members; Laying Trials, 2 members; Breeders, 2 members.

Income Tax and Rating.—Almost daily letters have been received by the Secretaries from poultry farmers of all grades in different parts of the country asking for the advice, and in some instances the financial assistance of the National Poultry Council, in defending them against the claims made by the Inland Revenue and Rating Authorities that poultry farming is not Husbandry within the meaning of the Finance Acts, and should, therefore, be assessed under Schedule D for Income Tax, and as Industry for Rates. It is impossible for the National Poultry Council to undertake the defence of all such cases, as the Legal Defence Fund is totally inadequate to do this. Its object is to make selection of cases so that, if possible, a ruling decision may be arrived at. It, however, continues to afford advice when appealed to. It is satisfactory to report that further decisions have been given by the Special and Local Commissioners in favour of poultry farmers, and in other instances, Inspectors of Income Tax have accepted such evidence when brought under their notice. Where notice of appeal has been given against the decisions of Commissioners there are no signs of the Inland Revenue carrying these into the Higher Courts. On the other hand, that department appears to be endeavouring to bring in poultry farmers under the higher scale (1) by seeking to assess for Income Tax poultry as distinct from other sources of income, and (2) in the case of farmers and other occupiers assessing the poultry under Schedule D, and the rest of the farm under Schedule B. The Executive recommend that such attempts should be strenuously resisted, and that these should be reported to it. All the signs are that by continued resistance to such impositions unitedly and individually poultry farmers will maintain the position the National Poultry Council has taken up on their behalf. It is suggested that electors should specialy call the ttention of Members of Parliament to this question, and in is way pressure may be brought upon the Inland Revenue to ither abandon what is really a persecution of individual poultry armers, or carry a case for test into the High Court of Justice.

Powers of Local Authorities.—Several examples of notices given y Sanitary Inspectors in urban areas, to the effect that backyard oultry-keepers must remove their poultry, have been brought efore the National Poultry Council, and have been dealt with. n several instances the notices have been withdrawn as a result f its action. In one case the officials of a local Poultry Society ere asked to make an inspection, with the result that, owing the bad conditions under which the birds were kept, it was vident that the Sanitary Authorities were justified in comelling abatement of the danger to public health, although the rm of notice was probably illegal. In another instance it would ppear that in a crowded area the crowing of male birds had aused annoyance to neighbours, upon whose complaint the local uthority was bound to take action. Under such conditions oultry-keeping can only be conducted where there is no danger public health or proving to be a nuisance.

Agrictultural Conference.—In view of the suggested Conference consider the present position of farmers and farming, the xecutive Committee made representations to the Minister of griculture asking that the Poultry Industry should be repreented. It much regrets to say that this request was refused n the ground that special branches of producers were not inended to be included in the Conference. In the lists published here did not appear to be anyone who can be regarded as fully onversant with the Poultry Industry, present or potential. The xecutive Committee is taking steps to prepare evidence to be ubmitted should the Conference take place, if an opportunity afforded.

Committee on Feeding Stuffs.—The important place which eedings stuffs hold in connection with live stock, inclusive of oultry, and the bad quality of much that is sold, especially to e smaller buyers, as well as the high costs, has led to the ppointment of a further Departmental Committee by the Minister Agriculture, subsequent to that which reported in March, 924, "to frame schedules setting out the articles to which reised legislation should apply, the definition of each of these rticles, and particulars to be stated on the invoice and also to e description applied to the article in each case." In this case, lso, there does not appear to have been any member appointed ho is fully acquainted with the Poultry Industry, which is lly justified by its extent and importance in having a voice in hatever recommendations that may result, and in ensuring as r as possible that whatever regulations are adopted shall be nergetically administered, which in many directions is where the ilure arises.

National Poultry Diploma Examination Board.—A special eport will be submitted from the Board, and is commended to e consideration of the Council. It is satisfactory to report at, although the number of candidates submitting for examinaon last September was less than previously, with the grants wards the expenses made by the Ministry of Agriculture and e Scottish Board of Agriculture, the total cost to the National oultry Council, apart from administration, was only £5 5s. 4d. r 1924. Most of the successful candidates at once obtained ppointments. The Harper-Adams' Agricultural College authories have kindly invited the Board to hold its 1925 examinations that centre on September 14th to 18th.

National Poultry Institute Scheme.—As explained at the Wye ouncil, the cause of delay in preparing schemes for the Institute nder this scheme to be located at Harper-Adams' Agricultural ollege was the difficulty in securing the right man to act as irector, one with experience in organisation and administration, ith scientific training combined with wide knowledge of Poultry usbandry. Soon after the last Council this position for a eriod of two years was accepted by Professor Willard C. hompson, B.Sc., Chief of the Poultry Division of the New ersey College of Agriculture. He arrived in this country during ovember, and is now engaged in the preparation of plans, which is anticipated will be announced at an early date so that the ork can go forward.

(Signed) A. T. WALKER, Chairman,
Executive Committee.

FINANCE REPORT. — The Treasurer, Mr. A. H. Brownson, submitted his report. He acknowledged gratefully the receipt of £30 from the N.U.P.S., and stated that the President had authorised him to say that a further sum of £20 had been contributed by members of the S.P.B.A., bringing their total contribution to the magnificent sum of £270. He moved the adoption of the report, which was seconded by Dr. Crowther, and agreed to.

PARLIAMENTARY COMMITTEE.—The Chairman (Mr. Stanley Street-Porter) said that he had very little to report. The changed political situation had of necessity limited their operations, but they were getting into touch with the Agricultural Committee of the House of Commons with the view to securing its support. The Bill which the Government proposed to introduce, making the marking of all imported goods compulsory, would include the marking of imported eggs, and their prospects of obtaining what they had fought for so long were considerably brighter.

EGGS AND POULTRY CONSUMPTION. — Mr. Bostock Smith, Chairman of the Committee, said that the appeal for a preliminary fund had entirely failed. The response had been wholly inadequate. He was quite convinced that the campaign, if carried out on the lines suggested, would have proved of real value, but he had no alternative but to propose that for the present it should be abandoned. He hoped that the committee would not be disbanded; the money subscribed would, of course, be returned. After discussion it was agreed that it was advisable to abandon the scheme for the present. The money should be returned to the subscribers, and the committee not to be disbanded.

Mr. P. H. Foulkes presented the following report of the National Poultry Diploma Board. He proposed its adoption, which was seconded by Dr. Crowther, and adopted.

REPORT OF THE NATIONAL POULTRY DIPLOMA BOARD.

The National Poultry Diploma Board, since the last report to the National Poultry Council, have issued to the Teaching Institutions concerned the Reports of Examiners upon the work done by candidates at the last annual examinations, and it is hoped these will be useful to the teachers.

The Board here present the financial statement of the 1924 Examination to the Council, and recommend that the same scale of fees be paid to the examiners that was adopted in 1923. The Ministry of Agriculture and the Scottish Board of Agriculture have been asked for the grants promised in respect of 1924, and on receipt of these amounts the statement shows a deficit. One more candidate for the examination would have covered the cost of the year's working.

The Board have awarded the diploma to: Miss E. J. Reeve, Mr. E. B. Lomax, Miss N. Chapman, Miss M. Hennerty, Mr. D. H. Flynn (who passed in 1923), as these have now complied with all the regulations.

The Board have had the Regulations under further consideration, and have made certain important revisions, including the following:—

1. Preliminary examinations.
2. Arrangements for candidates who take a course of instruction at an Institution, before taking the year on a farm, to be able to take the examinations in certain subjects at the end of this training period. In all cases, however, the examination in Poultry Husbandry must be taken after the practical training.
3. A revision of the marks awarded at the examinations has been made, and in future these will be:—

Section A.—Poultry Husbandry ... 800 max. 550 pass.

	Max.		Pass.	
Section B.—Buildings and Appliance Construction ...	150	,,	75	,,
Book Keeping	150	,,	75	,,
Agriculture and Horticulture	150	,,	75	,,
Anatomy, Physiology, Pathology	200	,,	100	,,
Chemistry and Physics	200	,,	100	,,

A candidate must pass in each section of the examination.

The Board have had various suggestions made by the examiners which have been considered, and the syllabus has been revised and certain alterations made for 1925.

The next examinations will be held at the Harper-Adams' Agricultural College, Newport, Salop, on September 14th-18th.

The printed Regulations and Syllabus have now been prepared, and copies can be obtained from the Hon. Secretary of the National Poultry Diploma Board, and from whom also copies of the papers set at previous examinations can be obtained.

P. H. FOULKES, Chairman.

NATIONAL POULTRY INSTITUTE SCHEME was presented by the Poultry Commissioner, Mr. P. A. Francis. Mr. Street-Porter proposed a vote of thanks to Mr. Francis, and remarked on the very satisfactory nature of the report. This was seconded by Mr. P. H. Foulkes, who fully endorsed the remarks of Mr. Street-Porter, and carried unanimously.

DEPOSIT SYSTEM. — The Hon. Solicitors, Messrs. A. E. Hamlin and Co., wrote suggesting that a conference of the Press should be held to urge a more general use of the deposit system by buyers, in order to put a check, as far as possible, to fraudulent advertising. The Secretary said that he felt that the Press could do no more. It was foolishness of people who would send money without enquiry. The President said that he did not think buyers were in such a bad position as producers. A small pre-paid advertisement for old hens, eggs or table poultry was sure to bring a big response, and the deposit system was no use in such cases. Often the address was but a mews, with a number chalked on the door. The only thing that could be done was to urge producers to make every enquiry, and satisfy themselves on the bona-fides of the advertiser.

HALF RATES ON BIRDS RETURNED FROM LAYING TRIALS.—This resolution was moved on behalf of the Poultry Club by Mr. C. N. Goode. Mr. C. Watson said that it would hardly be possible to go to the railway companies on such a trivial matter. The birds were sent to the trial for twelve months. It was an entirely different matter to the fancier who was sending birds to shows every week during the show season. If they went to the railway companies, they should go on matters of some importance, otherwise they would fail to get a sympathetic hearing. The President suggested to Mr. Goode that the wiser plan would be to withdraw the resolution. This was agreed to.

APPOINTMENT OF AN ARBITRATION BOARD. — Mr. Bostock Smith moved on behalf of the S.P.B.A. the following resolution :—

"That the National Poultry Council appoint an Arbitration Board to deal with any disputes which may arise between members of societies affiliated to the National Poultry Council, and that every society shall make it a condition of membership that no legal action shall be taken against any member of any society represented on the N.P.C., but shall submit the same to the National Poultry Council Arbitration Board."

Mr. Smith, in support of his resolution, said that if the parties to any dispute went to law both were losers. Judgment was often given in favour of the wrong side, because of the ignorance of lawyers as to the technicalities of the case, and of trade custom. Arbitration wa more often resorted to in trade disputes than formerl and in some agreements it was customary to insert clause, by which the parties bound themselves not take legal action in case of dispute.

Dr. Crowther said that while he whole-heartedl supported the principle of the resolution, h thought the compulsory clause was a mistake, and b adopting it they might defeat their object. He pro posed that it should be deleted, and suggested tha words should be inserted advising societies to urge o their members that in any dispute it would be wis to submit to arbitration rather than resort to law Mr. Bostock Smith accepted the amendment, and th resolution was then agreed to unanimously.

The Secretary reported that an invitation had bee received from Chester to hold the next meeting of th Council in that city on April 15th and 16th. It wa unanimously agreed to accept the invitation.

Invitations were received from Harrogate and Not tingham to hold the Annual Meeting of the Nationa Poultry Parliament there in July. Mr. Moore, Secre tary of the Yorkshire Federation, urged the claims c Harrogate, which were supported by Mr. W. Hamnett It was unanimously agreed that the invitation fron Harrogate be accepted.

Mr. C. N. Goode proposed, and Colonel Sandbac seconded :—

"That the National Poultry Council hereby places on reco its warm appreciation of the courtesy and hospitality of th Lord Mayor of Cardiff, Alderman W. H. Pethybridge, J.P during its visit to this great city, and asks his lordship to conve to the Cardiff City Council the warmest thanks of its membe for permission to hold the meetings in the City Hall.

"By so doing the Cardiff City Council has recognised tha whilst home breeding and production of eggs and poultry mus necessarily be more largely in rural areas, at the same time ther are many in urban districts who may by keeping a few fowl contribute to the national food supply, and that increasing hom food supplies is of essential importance to the great consumin centres. It is hoped, therefore, that the visit of the Nationa Poultry Council may give a stimulus to this industry in Sout Wales."

In the evening a largely-attended public meetin was held in the luncheon room. The chair was take by the Deputy Mayor, Councillor Snooks. Addresse were given by Professor Willard Thompson, Mr. P. A Francis, and the President.

NATIONAL POULTRY INSTITUTE.

Statement made by the Poultry Commissioner on behalf o the Ministry of Agriculture to the National Poultry Council a Cardiff on January 15th.

It will be remembered that at the meeting of the Poultr Parliament, held at Salisbury last July, I made a statement o the then existing position under the National Poultry Institut Scheme. As that statement was subsequently issued to th Press, there is no need for me to repeat anything I then said.

The principal development under the scheme since last Jul is that a director has been appointed to take charge of th National Institute in Poultry Husbuandry, which is to be estab lished at Harper-Adams' College under the scheme. The ma who has been selected for that post is Mr. Willard C. Thompson Professor of Poultry Husbandry at New Jersey State Agricultura Experiment Station, New Brunswick, U.S.A. It is a matte of great satisfaction that Professor Thompson has accepted thi post, for he is a man pre-eminently qualified for the work Professor Thompson has, however, only seen his way to accep the post for a temporary period of two years, and he will be fre to return to America at the end of that time if he so desires He has already taken up his duties at Harper-Adams' College and is at present engaged in making plans for the erection of the buildings of the new Institute and in formulating schemes of work which will be carried on there when the buildings are ready. In this work he is, of course, acting in close collaboration with Professor Crowther, the Principal of the College, under whom he serves, and with the Governors of the College. As Professor Thompson is himself addressing a meeting here this evening, the members of the National Poultry Council will have an opportunity of making his personal acquaintance.

There is little that I have to add to the somewhat full statement which I made at Salisbury in regard to the other sections of work under the scheme. I will deal with them under their respective headings.

BREEDING RESEARCH.—This is proceeding on methodical lines. In connection with the work on the inheritance of fecundity, a number of first-cross cockerels—e.g., Barred Rock x Sumatra Game—have been reared and are flourishing. Owing to a considerable incursion of crows in June, the Silky Chicks which were to be reared to mate with these birds were exterminated, but the loss was made good by the purchase of some Silky pullets for mating with the above-mentioned cockerels.

With regard to buildings, the scheme is complete except for the provision of a Broody House and the equipment of the laboratory. Until the builder's final account is settled and the exact sum available for these outstanding items is known, the work cannot be put in hand.

NUTRITION RESEARCH.—Buildings and Plant.—The buildings and plant for use with stock birds have proved to be in every way satisfactory for the purpose for which they were designed. The birds have been successfully wintered on the site so far.

Research Digestibility Determination.—Digestibility determinations of weak and strong wheats will be initiated in the near future. Six young Leghorn Cockerels have been dubbed and reserved for this work.

Composition of the White Leghorn from egg to maturity.—Satisfactory progress is reported. Collection of material for analysis is still proceeding. It has been noted that, although the birds are being kept under identical conditions both with regard to housing and food, the yellow pigmentation of the skin varies considerably among individuals. A similar investigation will shortly commence with Light Sussex.

Mineral Balance Experiments.—Analyses in connection with these experiments are now completed, and the experiments are being written up with a view to publication. The results obtained indicate that protein storage for egg production begins about a month prior to the commencement of egg laying, but in the case of Calcium (required for the shell) no such preliminary storage takes place. It would seem that the metabolic changes involved are such that the bird is enabled to draw on its immediate food supplies for the stores of calcium required for shell formation.

DISEASE RESEARCH.—The following is an outline of the Research work which has been done at the Ministry's Veterinary Laboratory during the last six months:—

Baccilliary White Diarrhoea.

1. Morphological and cultural characteristics and fermentation reactions of B. pullorum.

2. Pathogenicity of B. pullorum for chicks of various ages, hens, cockerels, ducks, rabbits and guinea pigs.

3. Routes of infection.

4. Estimation of minimum lethal dose of B. pullorum for rabbits, guinea pigs, hens and chicks.

All the above work has recently been finished.

The following work is still in progress:—

5. Location of B. pullorum in "carriers." The B. pullorum has been isolated from the spleen and gall bladder wall (as well as from the ovary) of a natural "carrier." This is a new observation. It is possible that further work may show that certain birds which give positive reactions to serological tests may have the B. pullorum localised in organs other than the ovary and may lay healthy eggs. Before killing "carriers" for the study of the localisation of the organism, it has been decided to trapnest the birds and make a bacteriological examination of about 50 eggs from each. This work will take at least another six months to complete.

6. Production of toxin of B. pullorum. Certain strains of the organism have been found to produce a toxin pathogenic for rabbits in doses of 2 c.c. intravenously. Efforts to immunise rabbits against lethal doses of the organism have not been successful. This work is being continued.

7. To ascertain if infection is passed from pullorum "carriers" to healthy adults. This experiment is sub-divided into six parts. It has now been in progress over four months, and up to date none of the healthy birds have reacted to the agglutination test even in a dilution as low as 1.5. Healthy cocks running with "carriers" for the same period have also given negative reactions.

8. Trapnesting of positive "carrier" hens (B.W.D.) and bacteriological examination of the eggs. This is still in progress.

9. Trapnesting of positive "carriers" hens (A. typhoid) and bacteriological examination of the eggs. The causal organism of avian typhoid has been isolated from the ovary of a typhoid "carrier." This is interesting, as in this country and in America the organism is not thought to pass through the egg. Avian typhoid in the countries mentioned does not appear to attack young chicks, although in certain parts of the Continent it is said to cause a heavy mortality among them. As the organism has been isolated from the ovary of only one case (this is the only typhoid "carrier" which has been examined), no conclusions can be drawn. This work is being continued.

In addition to the above research work 1,554 specimens have been examined and reported upon during the last six months.

A considerable number of letters of advice on poultry disease matters have also been sent to various individuals. The total number of specimens received during 1924, and dealt with, is 2,698.

As regards the Northern and the Southern Breeding Experiments, there is little material for further statement beyond what I said at Salisbury. Both the Sub-Committees which are dealing with these experiments are taken a keen interest in their respective tasks, and the staffs employed at both Reaseheath and Wye are doing good work. It is too early yet to make any announcement of progress made.

THE LANCASHIRE UTILITY POULTRY SOCIETY.

INTERNATIONAL EGG-LAYING TEST, 1924-5.

Second Month Report.

The report for the second period of the above test again shows most satisfactory results, practically all breeds doing well and maintaining an average production of forty per cent. with a good egg. Some of the birds which had partially moulted have commenced to lay, while there are still a few pens and individual birds which are rather backward through moult and immaturity. The health of the flock is good. A few have passed through the broody coop.

SUMMARY OF LEADING PENS.

Figures are Eggs and Points to date.

Large Breeders. Section 1.—F. Snowden, Cowling, 329, 338; W. Crabtree, Twiston, 334, 323; R. Marshall, Forton, 337, 313.

Large Breeders. Section 2.—F. Harvey, Bretherton, 329, 315; J. R. Hull, Thornton-le-Flyde, 292, 312; T. Parker, Longton, 226, 225.

Large Breeders. Section 3.—W. Hamnett, Blackpool, 248, 243; F. R. Welch, Bewdley, 231, 238; T. Gardner, Garstang, 167, 162.

Large Breeders. Section 4.—R. Rodwell, Nelson, 316, 310; R. H. Aspden, Balladen, 321, 301; F. Snowden, Cowling, 294, 292.

Large Breeders. Section 5.—F. Snowden, Cowling, 283, 296; R. Rodwell, Nelson, 309, 287; S. Street-Porter, Ely, 271, 278.

Small Breeders. Section 6.—J. W. Lodge, Holmfirth, 206, 198; J. Freeman, Greenfield, 174, 166; Dr. J. E. Helm, Newchurch-in-R., 160, 159.

Small Breeders. Section 7.—C. C. Humber, Hoole, 176, 163; W. H. Fletcher, Woodplumpton, 149, 162; Miss G. M. Barker, Scorton, 161, 159.

Small Breeders. Section 8.—T. Rossall-Sandford, Shrewsbury, 206, 207; W. J. King, Leamington Spa, 74, 69; Colonel S. Sandbach, Abergele, 27, 26.

Small Breeders. Section 9.—F. F. Fisher, Tarleton, 194, 190; J. and W. Purdie, Lanark, 176, 171; G. W. Sutcliffe, Hebden Bridge, 190, 171.

Small Breeders. Section 10.—W. A. Lansley, Whitchurch, 175, 187; J. Stuart, Garstang, 154, 149; O. Rawlinson, Waverton, 133, 121.

Small Breeders. Section 11.—Guy Mart, New Longton, 160, 150; Elizabeth Priestley, Oxford, 121, 110; Capt. J. T. M. Mee, Gressenhall, 102, 102.

Single Bird. Section 12 (Heavy).—J. R. Hull, Thornton-le-Flyde, 42, 46; E. N. Paterson, Tarporley, 43, 44; W. Ronson, Preesall, 45, 43.

Single Bird. Section 13 (Light).— Pedigree P.F., Stratford-on-Avon, 44, 41; R. H. Fryers, Bradley, 38, 35; W. Rogers, Market Drayton, 41, 35.

Novice Breeders. Section 14 (Heavy).—Miss Walker, Hothersall, 155, 153; W. Ellwood, Galgate, 111, 109; R. Hargreaves, Barton, 112, 102.

Novice Breeders. Section 15 (Light).—Wright and Purves, Longton. 180, 178; S. Marquis, Greenhalgh, 160, 158; R. Bradley, Hutton, 152, 147.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, JANUARY 16th, 1925.

GRAIN AND FEEDING STUFFS.—Moderate offerings of English wheat are available, and, with a fair demand, prices have advanced at all centres, except London, the average quotation being 13s. 6d. per cwt. as against 13s. 3d. last week. Imported wheat, generally, meets a quiet trade and prices, on the whole, have an easier tendency. Best samples of English malting barley are in demand, but feeding descriptions, both home-grown and imported, are in little request, and recent prices are barely maintained. English white oats are in fair request and are dearer at Hull and London. Maize is more freely offered and is cheaper on the week.

Milling offals are in fair request, and at Bristol and Liverpool British bran is 5s. per ton dearer, while meals generally sell at about recent quotations. Only a moderate demand is reported for oil cakes, and at London linseed cakes are from 2s. 6d. to 5s. per ton cheaper.

MILLERS' OFFALS.—Bran (British): Bristol, £9 7s; Hull, £8 12s; Liverpool,, £9 5s; London, £8 12s. Broad Bran: Hull, £10 2s; London, £10. Middlings—Fine (Imported): London, £11 2s; Course (British): Bristol, £10 15s; Hull, £10 10s; Liverpool,, £9 15s; London, £10. Pollards (Imported): Bristol, £8 15s; Hull, £8 10s; Liverpool, £8 5s; London, £8 15s. Rice Bran: Bristol, £9 15s; Liverpool, £9 2s. MEAL.—Barley Meal: Bristol, £13; Hull, £12 18s; London, £13 10s. Maize Meal: Bristol, £12 15s; Hull, £12 5s; Liverpool, £12 2s; London, £11 12s. Maize Meal (S. African): Hull, £11 5s; Liverpool, £11 5s. Maize Germ Meal: Bristol, £12 5s; Hull, £11 10s; London, £11 5s. Maize Gluten Feed: Bristol, £12 5s; London, £11 5s. Locust Bean Meal: Bristol, £9 7s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £14 10s; Hull, £13 8s; London, £14. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £20; London, £21.

EGGS AND DEAD POULTRY.

The egg market is steady and quotations for English and imported are very little changed on the week, supplies being sufficient to meet the demand. The trade for poultry is firm, while rabbits have been very scarce and selling at advanced quotations.

Week-end Prices—Eggs (per 120): British, 28s 0d, 27s 0d; Irish, 26s 6d, 25s 0d ;Danish, 26s 6d, 25s 6d; Dutch, 27s 6d, 26s 0d; Styrian, 19s. 0d, 18s 0d; South African, 21s 6d, 19s 6d; Italian, 23s 0d, 20s 0d;Lithuanian, 22s 0d, 18s 6d; Moroccan, 15s 9d, 15s 0d; Canadian, 22s 0d, 20s 0d; Belgian, 25s 0d. 23s 0d:Argentine, 18s 6d, 16s 6d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 8d; Irish, 1s 7d, 1s 2d; Others, 1s 8d, 1s 5d. Ducks, 1s 5d, 1s 1d. Geese, 1s 3d, 1s 0d. Turkeys, 1s 8d, 1s 3d.

EGGS.

Per Doz.—Ashford: First, 2s 6½d; Second, 2s 3d. Birmingham: First, 2s 8½d; Second, 2s 6d. Bridgwater: First, 2s 7d; Second, 2s 5d. Carlisle: First, 2s 10d; Second, 2s 7d. Chelmsford: First, 2s 8½d; Second, 2s 6d. Derby: First, 2s 9d. Dorchester: First, 2s 4½d. Exeter: First, 2s 4d. Hereford: First, 2s 3d. Ipswich: First, 2s 6d; Second, 2s 3d. King's Lynn: First, 2s 6d; Second, 2s 3d. Lincoln: First, 2s 6d. Llandilo: First, 2s 3d. Mold: First, 2s 5d; Second, 2s 4d. Newport (Mon.): First, 2s 6d; Second, 2s 4d. Norwich: First, 2s 8d; Second, 2s 5d. Oswestry: First, 2s 8d: Second, 2s 6d. Penzance: First, 2s 0d; Second, 1s 11d. St. Ives (Hunts): First, 2s 4½d; Second ,2s 2½d. Salisbury: First, 2s 4d; Second, 2s 2d. Shrewsbury: First, 2s 6d; Second, 2s 4d. Skipton: First, 2s 6d. Truro: First, 2s 0d. York: First, 2s 9d.

FOWLS .

Per lb.—Birmingham: First, 1s 4d; Second. 10d. Derby: First, *7s 0d; Second, *4s 0d. Exeter: First, 1s 5d. Hereford: First, 1s 6d; Second, 1s 4d. Ipswich: First, 1s 8d; Second, 1s 6d. Lincoln: First, *5s 6d; Second, *4s 0d. Llandilo: First, 1s 8d; Second, 1s 5d. Newport (Mon): First, 1s 6d; Second, 1s 3d. Shrewsbury: First, 1s 5d; Second, 1s 3d. Skipton: First, 1s 6d; Second, 1s 3d. Truro: First, 1s 5d. York: First, *6s 0d; Second, *5s 0d.

DUCKS.

Per lb.—Birmingham: First, 1s 0d; Second, 10d. Derby: First, *8s 0d: Second, *4s 6d Exeter: First, 1s 5d. Hereford: First, 1s 5d; Second, 1s 4d. Ipswich: First, 1s 6d. Llandilo: First, 1s 8d; Second, 1s 5d. Shrewsbury: First, 1s 0d; Second, 1s 3d. Skipton: First, 1s 0d; Second, 1s 4d. York: First, *7s 0d; Second, *5s. 6d.

*Per Head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, January 21st, 1925.

CONTENTS.

EDITORIAL 37
SOME MISTAKES WE MAKE 40
ANSWERS TO QUERIES 41
POST-MORTEMS ... ... 42 and 47
DESCRIPTION OF THE ULSTER BROODER 43
THE SIMPLEST METHOD OF SECURING A LIVING FROM HENS 44
UTILITY DUCK CLUB AND N.U.P.S. TEST 44
CORRESPONDENCE 45
NATIONAL EGG LAYING TEST 47
S.P.B.A. 48
WEST SUSSEX P.S. 48
LANCS. FEDERATION OF U.P.S. 49
THE UTILITY INDIAN RUNNER DUCK CLUB ... 49
NORTHERN U.P.S. LAYING COMPETITION 49
NATIONAL POULTRY COUNCIL 50
LANCS. U.P.S. EGG LAYING TEST 53
MARKET REPORT 54

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches. Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick. Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone HOP 894.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue.. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

SPECIAL NOTICE.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

HANTS COUNTY LAYING TRIALS.

FARM INSTITUTE, SPARSHOLT, WINCHESTER.

Report for third period ending 6th January, 1925.

Figures are points for third period and total points to date:—

Section A.—A. F. Holdaway (Pen 1) (W. .), 473, 1719; A. F. C. Holdaway (Pen 2) (W.L.), 498, 1669; R. McKenzie (W.L.), 211, 1289; H. R. Hunter (W.L.), 624, 1238; G. Wilkinson (W.L.), 254, 1050; Capt. A. Munro-Spencer (Pen 1) (W.L.), 356, 1043.

Section B.—Mrs. J. H. Drew (Ut. B.R.), 745, 1744; F. G .Wilkinson (W.W.), 389, 1516; R. McKenzie (W.W.), 273, 1507; Capt. D. W. Gunston (Pen 1) (W.W.), 492, 1481; Capt. D. W. Gunston (Pen 2) W.W.), 200, 1209; J. H. Thompson (W.W.), 290, 995.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, JANUARY 28th, 1925.

Editorial.

INCUBATION.

ontinuation of Paper which was read before the
oulton Poultry Breeders' Association on Jan. 7th.

The incubator room itself should be well con-
ructed. A cellar answers very well, but failing
at the room should be double-walled, and packed
ith some such material as sawdust. An earth
oor, perfectly level, is preferred to a wooden one.
articular attention should be given to the roof—a
atched roof beats anything else. The ideal tem-
erature to aim at is 65 degrees Fahr. If this is
aintained there will be very little trouble with
e moisture problem. The lower the temperature
the incubator room, the more necessary it is
supply moisture, as warm air carries more
oisture than cold, that is why the hot-air
achines give better results in the latter half of
e season. In a tank machine, with a room tem-
erature of 55 to 65 degrees, it would not be neces-
ry, and possibly not advisable, to supply mois-
re until the 10th day; with a lower temperature
would be advisable to supply it earlier. We do
t supply moisture to the eggs, it is placed in the
cubator to prevent the too rapid evaporation of
oisture from the egg. In a tank machine sand
moss litter saturated with moisture gives a
tter evaporating surface than water alone.

Now, coming to the temperature of the incubator.
xperiments have proved that if you take eggs
om under a sitting hen after the first week and
ace them in an incubator you get greatly im-
oved results; reverse the process, take them
om the incubator after the first week, and place
em under the hen, and no improvement follows.
at is important, because it narrows the issue.
cannot be a matter of oxygen, because there is
ore oxygen in the incubator than under the hen,
d at this stage the embryo would require very
tle indeed. It is, of course, probable that the
aporation of moisture is better controlled under
hen than in an incubator, but the real point
ems to be one of temperature, and there is very
tle doubt that a very large number of germs
rish, or are so weakened that they have either
t the vitality to develop or hatch, because of too
low a temperature during the first three or four days of incubation. The inside temperature of an egg under a sitting hen, after 24 hours, is 100 degrees. At the end of a week, 101 degrees. The increase is due to the animal heat engendered by the growing embryo. In the hot-air incubators, with the suspended thermometer registering 103 degrees, the inside temperature is only 97 degrees. I get the best results by running my hot-air machines at a temperature of 105 the first week, 104 the second, and 103 the third. This is not too high for the eggs in the centre of the drawer, and it ensures that those on the outside get a sufficiently high temperature. In a machine with a capacity of less than 100 eggs I find it best to start at 104. There is always danger if you remove the felts in the hot-air machines as advised by makers, that there will be too great a difference between the temperature of the top and bottom of the egg, the underside may be, and often is, chilled.

Turning the eggs is most important. A large incubator manufacturer told me that before they put their machines on the market they carried out a number of experiments. They tried 1,000 eggs without turning, the hatches were fairly good, but none of the chicks lived to be more than six weeks old, and in every case they found the yolk was unabsorbed. It is said that if the eggs are not turned, the germ will stick to the shell. That is only true if there is too much evaporation from the eggs. The real value in turning lies in the fact that you get a more even distribution of heat over the whole body of the egg. Two years ago I carried out an experiment with two lots of six incubators. One lot had the eggs turned twice daily, the other four times. Right through the season we got much better results when the eggs were turned four times a day. In neither case was there any cooling. American experiments have proved that the more frequent turnings give a better hatch and a stronger chick.

Last spring I examined over 2,000 eggs sent me by members of the S.P.B.A. who wanted to know why they didn't hatch. Of course, it was not possible to say in very many cases without some history of the incubation. But I think I could say fairly safely, that 70 per cent. of them were due to the stock birds and to bad storage of eggs. In the former case one could generally come to this conclusion by the regular rate with which the chicks die throughout the period of incubation.

In the latter we found the membranes tough and dry. In a large number of cases the chick completely filled the shell. This was due to excess of moisture, or insufficient ventilation during the last few days of incubation. In most cases this occurred with the hot-water machines, and I found that many members had stopped the ventilation holes. This sometimes answers for the first few days, but considerably more ventilation is necessary during the last week. To a stagnant atmosphere in the last few days a very high percentage of dead-in-shell is due, and in such cases we find a percentage of cripples, chicks hatched which have failed to absorb the yolk, and the gummy, sticky, messy chicks you sometimes get. Cripples, too, are often caused by the eggs drying down too rapidly.

To sum up, my experience is this, that if you get dead-in-shell from good hatchable eggs, which have not been badly stored, or stored too long, it is due to three primary causes : Too low a temperature during the first few days, which weakens the embryo, and causes it to die at various stages ; the too rapid drying down of the eggs in the hot-air machines when the felts are removed as per makers' instructions ; an excess of moisture and stagnant atmosphere in the hot-water machines. You cannot lay down any hard and fast rules. What may be successful with Jones in the attic will fail with Smith in the cellar ; everyone must study their own conditions and adapt themselves to them. The temperature of the incubator room should be carefully noted, and an effort made to supply moisture in accordance. In some cases spraying the eggs on the 20th day has given excellent results. In others it has proved disastrous..

Just one word of warning in regard to the nursery drawer in the hot-air machine.. That is a veritable death-trap. The difference in the temperature between that and the egg chamber is often as much as 20 degrees, consequently the chicks get chilled, and show symptoms similar to B.W.D.

FIFTH MIDLAND LAYING TEST.

The second lunar month of the Midland Laying Test, at Handsworth, finished on December the 28th, the last three days being amid a terrific tempest of rain and wind. Indeed the conditions were those of a hurricane, and the general health of the stock was sorely tried. A number of the pens were moved by the wind, and many roofs and floors have had to be replaced and repaired, the damage all round being considerable. However, the 500 odd birds produced a total of 5,794 eggs, made up of 5,624 first grade and 170 second grade, as compared with a total of 3,903, composed of 3,739 first grade and 164 second grade for the previous month. The average number laid by each hen is exactly 11-49 eggs during this second month, which shows an appreciable increase of 3.75 eggs each bird above the first month's average, which was 7.74 eggs laid per bird.

SUMMARY OF LEADING PENS.

White Leghorns.—A. Rickard, 145 eggs; Arthur Snowden, 134; E. J. Ashton, 127.

White Wyandottes.—W. Barron, 131; C. H. C. Partridge, 127; Lieut.-Colonel Crichton, 118.

Rhode Island Reds.—K. G. Crawford, 114; Major Kingscote, 113; J. B. Bent, 112.

Light Sussex.—C. L. and J. C. Thompson, 93; F. B. Welch, 92; Colonel A. Dugdale, 87.

A.O.V. Light Breed.—E. D. Thomas (White Bresse), 80; Blakesley and Blyth (B. Leghorns), 76; R. A. Fawsett, 71 .

A.O.V. Heavy Breeds.—H. W. Gee (Barnevelders), 80; J. Gordon Herbert (Barnevelders), 59; F. R. Welch (Buff Rocks), 50.

Single Bird Section.—F. Nicholls (W. Wyandotte), 40; F. A. Ramm (B. Leghorns), 36; F. A. Ramm (B. Leghorns), 34.

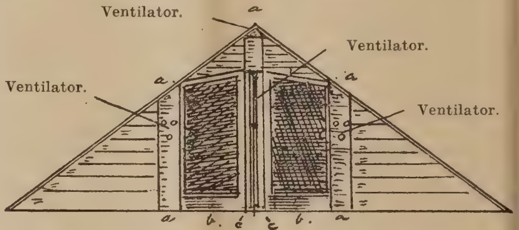
The Apex House.

By **A. MORTON NANCE.**

I have been very much interested in the articles and letters appearing in " Eggs " on this type of Poultry Housing. More so, perhaps, because about eighteen months ago I constructed one myself entirely on my own lines—have never seen any other.

I thought that the present would be a fitting opportunity to describe my Apex House, which would naturally be far more interesting to your readers with a few designs.

To begin with, the dimensions are 18½ft. in length, 20ft. in width, and 7ft. 6in. in height.

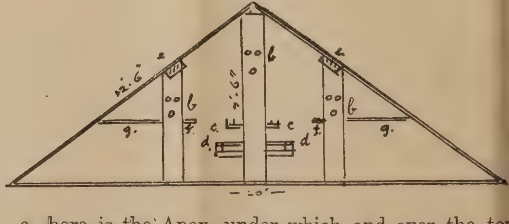


The first sketch represents the exterior of one of the ends, which may be both similar if desired. The letters A. mark the three railway sleepers, at each end sawn off at the correct angle, which sustains the weight of the roof.

B.B. are two wire netting doors to allow the maximum of fresh air during the day.

C.C. are the outside frames of the two doors, which at night are fastened outside the wire netting doors, which here are hooked together with a specia latch contrived so that the wind cannot displace it, at the same time acting more or less as a weather-screen. The ends are boarded up with chamfered o rebated weatherboard.

The next sketch shows the same view in skeleton, and will explain the construction.



a. here is the Apex, under which and over the top of the sleeper the used-up air is expelled.

bbb. are the ventilating holes in the sleepers.

cc. are the roosts, dd. the dropping boards.

The roosts are two 18½ft. lengths of 2 x 3 batten supported only by a 15in. length of 2 x 3, fastene with stout inch nails to the sleeper. The roost remain perfectly rigid, in spite of the length of th span and the weight of the birds (Wyandottes).

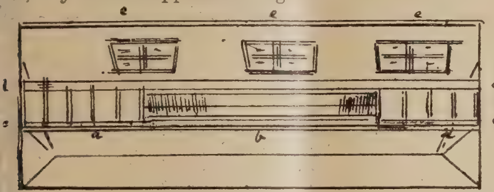
The dropping boards are supported on two 18½ft. ngths of 2 x 3, which are again supported only by vo 3ft. lengths of 2 x 3.

They are made of 18½ft. lengths of tongued and ooved matching. The effect of this arrangement is 1 uninterrupted scratch area of 370 square feet, hich in itself is a great advantage.

The frame of the building is composed of 2 x 3 1d 2 x 1½ batten, 20ft., 18½ft. and 13ft. respectively, 1d two 4 x 2 purlins resting on the sleepers at 3.3, hich are shaped at the top end to accommodate 1em.

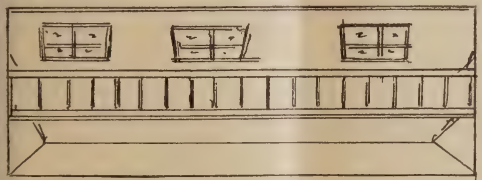
f. is the end of the nest promenades, and g. is the oor of the nests.

The next sketch shows the arrangement of the est, dry mash hoppers and lights.



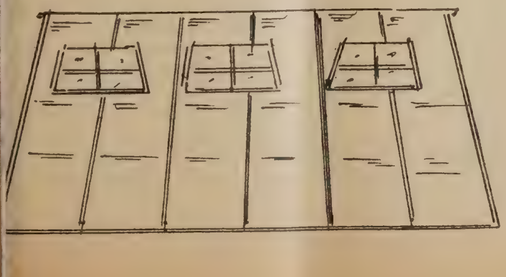
The nests and hopper, it will be seen, are built under the roof purlin. Two 6in. boards, running e full length of the house form, at the same time, e bottoms of nests and hopper, with waste board, e container of the hopper being a 6in. board fixed in osition at the correct angle, both for handy filling at e top (over the purlin) and for supplying the feeding ay underneath. Another 6in. board forms the back hopper, whilst a 4in. board forms the back the nests, the divisions of which are fixed before e roof is laid on.

eee. are the lights. The angle of the roof pitch, 1d the position of the lights are arranged with great re so as to throw the light into the deepest part of e scratch area.



On the opposite side, as above, nests only are ranged beneath the purlin.

The lights on this side are placed "quin cunse," in alternate position to those opposite. In this y the maximum light is secured for every inch of e interior, which all those who have received it clare to be the best lighted poultry house they have er seen.



The exterior is ruberoided in lengths, which go right over the Apex from base to base, thus excluding all wet. These lengths are held in position by 2in. battens, 3ft. apart, and are cut to allow for the lights with margins to keep the wet from passing between the window-frames and the roof-boarding to the inside of the building.

One great advantage of the Apex principle is the airy space in which the birds roost, and another (at least in my design) is that the birds get to work in the scratch early, as the house is well lighted long before the ordinary type of poultry house, and the scratching exercise is continued twenty minutes to half-an hour later in the evening.

In conclusion, I am not going to disguise the fact that there is, nevertheless, one very great drawback to this type of house, and that is that there is a tendency for the birds to lay in the litter in the angles at the base of either side, and this, alone to the ardent trap-nester, would be sufficient to condemn it as a practical house.

HARPER-ADAMS' AGRICULTURAL COLLEGE, NEWPORT, SALOP.

POULTRY LAYING TRIAL, 1924-1925.

Report for Second Period.

The second 28-day period of the trials terminated on the 26th December. The general health of the birds is satisfactory, but a good proportion are still moulting. The egg-production figures show a notable advance on those recorded for the corresponding period in the previous trials, the average for all competing birds being 13 eggs. This is the highest second period average recorded in the last three years. The Heavy Breed Sections in the Championship are doing well, their average of 161 eggs per pen (10 birds) comparing favourably with the Light Breed Section's 131. The Wyandottes lead the Breed Sections in the Small Flock Trials with an average of 82 eggs per pen (six birds) for the period. There have been several changes in the leading positions. Mr Watson's pen of Wyandottes displaces by a small margin Mr. Lister's Sussex in the Heavy Breed Section of the Championship. Notwithstanding the unfortunate loss by death of one of the birds, Capt. Mee's pen of Buff Leghorns have improved their position in the Light Breed Section of the Championship.

The following are the leading positions at the end of the second period:—

SUMMARY OF THE LEADING PENS.

Championship Trials.

Section 1. Light Breeds.—Frank Snowden (W.L.), Keighley, Yorks, 303 eggs; A. White (B.L.), Malpas, Cheshire, 294; Miss N. H. Bell (W.L.), Ightam, Kent, 306.

Section 2. Heavy Breeds.—E. Watson (W.W.), Colne, Lancs., 378; W. Lister (L.S.), Northiam, East Sussex, 377; F. H. Collins (W.W.), Bewdley, Worcs., 372.

SMALL FLOCK TRIALS.

Section 1. White Leghorns.—W. McMahon, Newton Hearns, Renfrewshire, 249; Messrs. J. and W. Purdie, Lanark, 230; J. McLaren, Ramsbury, Wilts., 197.

Section 2. White Wyandottes.—D. W. Gunston, Bramdean, Hants, 270; Messrs. Allen Bros., Harrogate, 231; Mrs. Alec Wilson, Garth, Breconshire, 222.

Section 3. Rhode Island Reds.—F. and A. H. Sanders, Lutterworth, near Rugby, 213; Dashwood Farms, Ltd., Deddington, Oxon, 200; Mrs. Jellis, Dunton Lodge, Rugby, 193.

Section 4. Sussex.—F. Rossall Sandford, Shrewsbury, 206; W. Bradbury, Tottington, Bury. 188; A. Hughes, Malpas, Cheshire, 187.

Section 5. Black Leghorns.—W. A. Lansley, Whitchurch, Salop, 197; Lady Anderson, Sharnbrook, Beds., 168; The C.W.S., Whalley, Lancs., 164.

Section 6. Any Other Light Breed.—Messrs. Storer Bros (An.), Didsbury, Manchester, 179; H. Lyndon Lemon (La. Br.), 162; H. B. Howe (Min.), Leicester, 154.

Section 7. Any Other Heavy Breed.—Miss H. Fowler (B. Orp.), 245; F. R. Welch (Rk.), Bewdley, Worcs., 203; Miss P. Mills (Rk., Bishop's Castle, Shropshire, 194.

SINGLE BIRD TRIALS.

Section 1. White Leghorns.—W. Hamnett, Blackpool, 43; J. Potter, Worsley Mosnos, Wigan, 41; W. M. Golden, Leire, Rugby, 42.

Section 2. White Wyandottes.—A. White, Malpas, Cheshire, 45; Mrs. Alec Wilson. Garth, Breconshire, 44; S. Street-Porter, Ely, Cambs., 45.

Section 3. Any Other Light Breed.—A. White (B.L.), Malpas, Cheshire, 36; S. Street-Porter (B.L.), Ely, Cambs., 33; W. Hamnett (An.), Blackpool, 36.

Section 4. Any Other Heavy Breed.—Chivers and Sons (L.S.), Histon, Cambridge, 45; A. White (L.S.(, Malpas, Cheshire, 39; W. M. Golden (L.S.), Leire, Rugby, 39.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (**NOT from Major Saunders**).

ALL questions should be addressed to the Editor, Major Saunders does not reply to questions either by post or through these columns, except **in** relation to Post-Mortem Examinations.

Old Bill (Lane Church) has twelve White Leghorn hens which came through the moult, and started laying nicely. Now they have all given over, and on handling them he finds they are all too fat. He wants to know how to get them into breeding condition. He has taken the dry mash away, and is feeding grain only. That is a mistake, Old Bill. You would have done better to have increased the bulk by adding another pound of bran, giving one handful of finely kibbled grain as the first feed, and opening the mash hoppers, say about 11 o'clock; give all the grain in deep litter, so that they get plenty of scratching exercise; watch them carefully, as I have often found that people who are scared of getting their birds too fat get them too thin.

Y. Y. (Barnstaple) sends twelve eggs from his incubator, a tank machine. The hatch has been a disastrous one. The temperature was steady throughout, and nothing untoward occurred which would account for his misfortune. The machine was run according to maker's instructions, eggs were cooled twice daily, and he is confident there was no chill. Of the eggs sent two contained embryos which died about the tenth day, two were pipped, and the remainder had died on the 19th day. Had Y. Y. examined the eggs, he would, I think, have discovered the source of the trouble, which was lack of ventilation in the incubator. The chicks completely filled the eggs; there had not been sufficient evaporation. In answer to his second question as to whether R.I. Reds mated to a Black Leghorn male will give chicks whose sex can be determined at hatching, the answer, as they say in the House of Commons, is in the negative. To his third, as to whether his mash of: Bran 1lb., Sharps 3lbs., Maize Meal 1lb., Biscuit Meal 1lb., and Fish Meal 1lb., is a good one for breeders kept in confinement, I should say no. It would be greatly improved if Alfalfa Meal was substituted for the Bran, and Ground Oats for the Maize.

T. S. E. (Westerham) has mated a pen of Light Sussex. The first 80 eggs incubated have shown 75 per cent. infertile, and he wants to know the reason. I could help him better if he were to send me fuller particulars. This is very barren material to go on. The cause may be an immature male, or one not in breeding condition, or he may be constitutionally wrong. There is, too, the question of the birds being over fat. I must leave it to you, T. S. E., as you have given me no details. In answer to his second question as to the crop of the White Leghorn hen being "baggy," this would probably be due to its being full of light bulky food, which would cause it to sag. It is not a case of sour crop I should judge from the description.

J. B. (Bristol) has some chicks five weeks old which are not thriving. They have been given biscuit meal twice daily, dried off with Sussex ground oats, oatmeal and milk, and bread and milk, with three feeds of a dry chick feed, sample of which he sends, and which he believes to be the cause of the trouble. The mixture is a fairly good one, contains rather more millet than I like to see, but it would not explain the unthriftiness of the chicks, the real cause of which, I believe, to be over-feeding. I suggest that he cuts the biscuit meal down to one feed a day, and dries it off with coarse thirds, in place of the ground oats; is careful to see that the food is not given in a sloppy condition, that the chicks are not overcrowded, and have plenty of exercise.

G. L. T. (Hull) finds blood in the droppings of his pullets, and asks for an explanation. If he had sent details of his feeding I could possibly have helped him. The most probable cause is excess of fibre in the mash, or the use of a bad sample of oats. You may be using a bad sample of clover or bran, G. L. T., or too much of it. In answer to his second question, no trials have ever been made which indicate that fish meal is a better egg producer than meat meal. In an otherwise well-balanced ration I should not expect to get better results with the one than the other.

R. T. W. (Liverpool). The sample duly received, and the ingredients are of good average quality. If it is for layers only, I would use one part maize meal (Indian meal), and reduce the S.G.O. to half part. This would be cheaper and mean more eggs.

"Novice" (Burnley) writes to say that he has taken over 80 head of poultry, mostly Black and White Leghorns, and now he is troubled as to the feeding. At present he is giving a wet mash; the birds have a good grass run, but the results are not satisfactory. He is using an ordinary dealers' laying mash. I cannot say whether the birds themselves or the mash he is using are at fault, but in response to "Novice's" request I give the following as a good layers' mash, and a cheap one. I would advise him ot to change to dry mash at the present time, as this rould probably check the pullets, which will be coming nto lay:—1lb. bran, 4lbs. thirds, 2lbs. maize meal, lb. soya bean meal, and ½lb. fish meal or meat and one meal. Do not scald the bran, but reserve it to ry off the remainder of the ingredients with. This a layers' mash only.

J. B. (Southport) has three-quarters of an acre of round, which was oat stubble when he took it over year ago. He has 64 pullets of the following breeds: lack and White Leghorns, R.I. Reds and Anconas, hich he intends increasing to 150 head, and wants to ombine wet and dry mash. The following dry mash ould answer his purpose:—1lb. bran, 1lb. clover or falfa meal, 4lbs. thirds, 2lbs. maize meal, ½lb. extracd soya bean meal, ½lb. meat and bone meal. There ill be no object in changing this for a wet mash. He ould use the same formula, but if he prefers, could place one part of the maize meal with S.G.O. The falfa or clover meal is recommended here because e has no green food.

E. P. (Earlestown) is informed that replies cannot e made through the post to non-members of the .P.B.A. The samples he sends are of average uality, but the composition of the mash is not good. he middlings are inferior, as is also the clover meal. could trace no dried yeast, and I frequently advise at gluten meal should not be used. He has no claim far as I can see on the corn merchant. As the sults are so bad, I would suggest that he tries the llowing mash: 1lb. bran, 1lb. alfalfa meal, 4lbs. ood middlings, 2lbs. maize meal, ½lb. soya bean meal, d ½lb. meat and bone meal. This is for layers only, d will be cheaper than the one he is using, and give tter results.

"Fancier" (Stockport) asks what is the best forula for a dry chick feed from the shell. Then conues:—"Do you recommend any of the following: ari, canary seed, hemp seed, millet, split peas or oats?" Three of these I have expressly condemned. good formula is:—15 parts finely cracked maize, 15 ely cracked wheat, 10 split groats, 3 canary seed, d 2 hemp seed. In answer to his second question to a well-known cooked chick feed. The one he entions is a perfectly reliable one, and I could recomend it. His third question is:—What is the best rmula for a wet mash for chicks, especially for hibition stock, where size and late maturity are sirable? "Fancier" must recollect that size is inrited, and the limit to which it will reach is deterined by inheritance. The best formula I can give n for a wet mash would be biscuit meal, dried off th coarse middlings, preferably having been moised with skimmed milk. A hopper of dry bran ould always be before the chicks. In addition they uld be given oatmeal mixed to a crumbly condition th milk, and bread and milk. After the first fortght they may be put on the following mash:—One rt each S.G.O. and biscuit meal, four parts coarse rds, half part alfalfa meal, half part bran, d half part meat and bone meal. As much fresh en food as possible. For the first six weeks I should certainly give them skimmed milk to drink. I do not think it will be necessary to include bone meal if milk is given, and the meat and bone meal used in the mash. As a grain feed, after eight weeks old, I would prefer good sound, plump oats to anything else. Maize should be avoided, and a hopper of dry bran should be always before the chicks from the first, as this helps them to build up frame. With regard to the samples sent. These were terribly mixed up. All were quite satisfactory, however, when I was able to sift them out. Yellow maize is rather better than white maize, as it contains the vitamin "A.," which is absent in the latter. One, of course, appreciates that it does not do to feed yellow maize to white birds which are intended for exhibition. "Fancier" adds that although only an amateur and interested in exhibition stock, he finds that by feeding his pullets on the lines we recommend, and giving plenty of exercise, he gets an abundance of eggs. An average of 14 and two-thirds eggs per bird from a flock of White 'Dottes during December is not bad, in spite of the fact that we do not seem to think they *can* lay. He expresses very kind appreciation of "Eggs." I am very glad to hear of "Fancier's" success, but he must remember that when we are speaking of exhibition stock we must base it upon the average and not upon individual cases.

"Farmer" (Chester) has a poultry house large enough for 40 fowls, which he wishes to put into a garden. He wants to arrange so that he can have two grass runs for the fowls to run in, and would like to know how many square yards each run should be, to give the fowls space. It is, of course, difficult to lay down hard and fast rules, but I think that in each run he should allow 16 square yards per bird as a minimum.

P. S. C. (West Bromwich) finds that his birds are not masticating their food properly, as he noticed that they passed the grain in the excreta. I am afraid the only suggestion I can make is as to the quality of the foods, and I would suggest that for the present he omits the oats from the grain feed, and replaces them with one part wheat. He adds that they have plenty of grit. I would advise giving the birds a small dose of Epsom salts, and slightly reducing the feeding.

"'Novice" (Somerset) asks for advice as to feeding pens of White Leghorns and Wyandottes. As far as I can discover at present, his feeding is perfectly satisfactory, and although the production of eggs is rather variable, I do not consider it very bad for a breeding pen just at this season of the year. Under the circumstances I would not advise that any change should be made. The birds appear to be in good laying condition, and I think, "Novice," if you will have a little more patience that eggs will be more prevalent.

C. A. S. (Lothersdale) sends a sample of special thirds at 12s. 6d. cwt. These are very fair value for the money, containing a fair percentage of bran, but are much above the average quality. Sussex ground oats at 17s. are by no means "Sussex" ground, and I suspect them to contain a percentage of barley.

Straight-run bran at 10s. is just a fair sample. The laying meal No. 1 at 14s. 6d. cwt. is good value for the money, and I consider it a very satisfactory mash. There is very little to choose between this and No. 2 at 16s. Both are excellent mashes, and good value for the money.

"Fish" (Plumstead) sends sample of fish meal at 23s. cwt. This is a little smelly, and I would advise him to be careful in using it. The sample of meat and bone meal at 8s. cwt. is much to be preferred to that at 16s. 6d., or another sample which he sends at 16s. If "Fish" uses the best sample of meat and bone meal I do not think he need worry as to the change from fish meal badly affecting egg production.

POST-MORTEMS.

M. S. K. The post-mortem examination of the hen showed the cause to be tubercular peritonitis and dropsy. It is seldom that only one case of tuberculosis occurs in a flock, and you may have many more in varying stages of the disease. I should advise isolation of this hen's immediate associates, and the prompt destruction of any that shows signs of illness. The house, etc., that this bird has inhabited should be thoroughly disinfected, and all litter and droppings collected and burned. The tuberculin test applied to the flock, unless the numbers make this an economic impossibility, would be the surest and quickest means of detecting the affected birds, and enable you to eliminate them, and start with a clean sheet. Tuberculosis is a most insidious disease, and will, unless stamped out, cause continued losses, and I should advise using every means possible to obtain a tubercle free flock.

G. T. R. I was of the same opinion as you, that probably the first bird examined was not perhaps a fair criterion by which to judge the cause of the other losses, but the ovary of the second one was in exactly the same pathological condition, viz., highly congested and with a number of ova dead and decomposed; others were simply blood tumours, and only very few normal. Of course, the difference in maturity of the ovary was very marked, and in this case there had been no haemorrhage from the rupture of an ovum, and no peritonitis—in other words, it was only in degree that the two cases differed. Unless this is some unknown and unrecorded infectious trouble, dietetic error must be the cause, and I should advise a drastic reduction of all stimulating constituents of the ration.

E. J. L. Both the White and Black Leghorn hens were the victims of blood poisoning, due to the absorption of decomposition products from dead yolks that were still on the stalk. Such conditions are associated with a too-stimulating diet or the administration of "tonics" with the view of forcing egg production. You do not say if any of these forcing spices have been given, but in any case I should advise omitting the maize for a time at least from the ration. Give more green stuff and a daily dose of fifteen grains of glauber salts per head for ten days. The salts are conveniently given by dissolving in the water that is used to mix the mash.

A. J. N. The post-mortem examination of the eight chicks showed the cause to be B.W.D. in each case. I am afraid there is little that you can do to prevent further loss, with the exception of removing and destroying any chicks showing symptoms, and thoroughly disinfecting the hover. Of course, they should be strictly isolated, and precautions taken not to carry infection to other hatches. The incubator should be carefully and thoroughly disinfected before using again, as this is one of the main channels by which the next hatch may become infected. The food sample should have been sent to Mr. Tom Newman, as that is not in my department. However, the bacillus pullorum is responsible, and not the food, so that question does not arise.

C. A. G. Pneumonia was the cause in the case of both chicks sent for post-mortem examination. I do not think there is any risk to the eggs still in the incubator, as this trouble is most probably due to chill, which would quickly carry off weakly chicks. Other causes of this type of pneumonia are bad air in the brooder from imperfect ventilation, or fumes given off from the heating unit. It is always a sound policy, where considerable losses have occurred, to clean up and disinfect the equipment before again using it for a succeeding hatch.

G. A. F. The post-mortem examination of the White Leghorn pullet showed the cause to be acute inflammation of the kidneys. The causes of this condition are many, and in many cases it is only by the process of elimination that one traces it in any one particular instance. Poisonous plants, spoiled and mouldy food, decaying flesh or fish, fish or meat meal that has become contaminated during the process of manufacture or subsequently, and in many instances exposure to cold rains and wind, all these are possible causes of kidney inflammation. I should advise a careful inspection of the foodstuffs for any signs of spoiling, and the discarding of any that are at all suspicious. A daily dose of fifteen grains per head of glauber salts for a week would help to eliminate poisons from the system and flush the kidneys. Protection from chilling winds and rains should also be given, and the birds made as comfortable as possible. For the present I should advise omitting the maize from the ration, as being rather too stimulating.

PRESTON AND DISTRICT UTILITY POULTRY SOCIETY.

The eighth annual six months' laying competition was hel at Woodland Grange, Penwortham, under the management o Mr. J. Rainford, who reports all birds in good health, a numbe of birds have not yet got through the moult.

Third Month's Report, December 4th to 31st, 1924.
Figures are Eggs and Points respectively.

Section 1. White Wyandottes.—J. T. Finn, 222, 2112; J. E Dawson, 204, 1996; J. Hodgson, 201, 1892; G. H. L. Armstrong, 17 1790; H. Pinder, 175, 1738; J. Crompton, 181, 1692.

Section 2. A.O.V. Heavy.—C. C. Humber (R.I.R.), 210, 2088; A G. V. Ermen (R.I.R.), 185, 1826; R. Moon and Sons (R.I.R.), 19 1696; J. J. Rawlinson (R.I.R.), 157, 1546; N .Swarbrick (R.I.R.), 10 1028; Mrs. M. Walker (R.I.R.), 96, 952

Section 3. White Leghorns.—R. Moon and Sons, 146, 1350; A G. V. Ermen, 130, 1270; J. C. Barnes, 125, 974; H. Holden and Son 95, 946; E. Collier, 67, 590; J. Fletcher, 57. 521.

E. COLLIER, Hon. Secretary.

The Internal Mechanism of the Egg-Laying Machine.

By J. L. ROSEDALE.

IV.—RUNNING REPAIRS.

In the last lecture it was mentioned that the materials required in poultry foods were water, protein, fat, carbohydrate, salts, and Vitamins A and B. It is necessary to ascertain what these substances are for before we can appreciate any ogical method of deriving a proper diet from available foods.

When we desire to form rations we should have wo documents before us: (1) A table of analysis of foodstuffs, and (2) the price list of the merchant we are going to buy from. We shall have occasion n the last lecture of the course to illustrate how hese documents may be used for the purpose of ranslating the protein, fat and carbohydrate, etc., with which we must deal now, into terms of middlings and fish meal, etc.

While we require to know something of the physiological importance of the food materials, we require only just enough of this knowledge to enable us to make economical changes from time to time. The burning question with the practical man is always—How much? It is, therefore, from that aspect that I shall attempt to deal with the subject. Science has always been interested in that side of he question. Animal physiology used to be likened o a steam engine by the older workers, who proceeded to answer the quantitative question in terms of calories. All other food materials were hen calculated in similar terms, such as "Starch Equivalents," "Therms," etc. Nowadays so much more knowledge has been gained concerning he quality of food that to retain these old methods would be sheer "cart before horse" physiology!

We have already endeavoured to impress the fact hat what is wanted is a steady proportion of growth and metabolism. If we endeavour to reuce the proportion of frame to soft tissue, disaster awaits our birds; if we grow too much rame in proportion to their things, disaster awaits ur pockets.

The proportions of the different materials in the ird are found by chemical analysis:—

Edible portions: Protein, 18.7 per cent.; Ash, .8 per cent.; Fat, 15.5 per cent.; Water, 63.7 per ent.; undetermined, 1.3 per cent.

The inedible matter is made up as follows:—

Empty gut ...	6 %	Heart	0.5%
Feathers	6 %	Kidneys	0.6%
ontents of gut	4 %	Empty crop ...	0.4%
iver and gall	2.5%	Caeca	0.3%
reathing apparatus	0.6%	Proventriculus .	0.3%
rain and spinal cord, etc.	0.3%	Blood	3.2%
		Pancreas and spleen	0.3%

Taking the different organs collectively they consist roughly of a similar analysis to that quoted above, with a slightly higher water content and a correspondingly lower fat content in some of the items. (For further details see "Analyses and Energy Values of Foods," by R. H. A. Plimmer, published His Majesty's Stationery Office.)

The usual tables of food analyses have two serious drawbacks. They fail to give (1) a detailed analysis of the ash contents and (2) a vitamin analysis. Both these points have to be taken into consideration.

We must now consider how much total food a bird is going to take in a day. Once we know that, we can compound the ration in proportion to the requirements. There can be no hard and fast rule as to total quantity. Just as we may eat an extra slice of bread for breakfast on some mornings, so with the hen. A liberal allowance must be provided for each pen, and yet food must not be wasted. Personal observation is the only safe guide to the best quantity.

The calorimeter will not help because its use entails placing a bird under extremely abnormal environment, which clearly can only be relied upon to give abnormal results. We know, of course, that a great part of the diet must supply heat and energy, but if we systematically keep the PROPER PROPORTIONS of the food ingredients, there will still be ample allowance for these purposes.

Observation will permit us to use an allowance of four ounces of food for the purpose of discussion in what follows.

We shall then decide the percentage proportions of the various necessary food constituents, and be able to express them as ounces, etc. From analysis tables of foods we shall be able to make up our four ounces of food in terms of ordinary foodstuffs.

In estimating food requirements we must first know what a bird does with its food. There are four things that food can be used for: (1) Maintenance, and the supply of heat and energy; (2) Growth; (3) Reproduction, including the manufacture of eggs; (4) Laying on of fat; the rest is wasted.

Apart from the energy requirements, maintenance includes the repair of tissue which gets broken down in the ordinary course of metabolism. Growth means the formation of brand new tissue. It is therefore reasonable to be guided by the analysis of the bird in composing that part of the diet which is used for these purposes. The problem then resolves itself into this—How much of the total food is necessary for growth and maintenance? This question was touched upon in certain of the charts which Professor Plimmer and I exhibited at the Barcelona Congress. Without going into details, the average utilisation of food for growth is about 50 per cent. in the early stages gradually decreasing to about 25 per cent. as the bird gets older. While, during the past five years we have extended our observations to some hundreds of birds, we are quite willing to recognise two or three points: (1) Individuality of different birds and breeds as regards their quantitative needs; (2) that the number of birds that we, or for that matter any other research workers can observe, form only a small proportion of all the birds in the world; (3) that our averages are only averages of growth on different diets; (4) that utilisation is superior in birds getting the best diets.

With these points in mind we may consider the requirements of the different dietary essentials.

Turning first to protein (or Albuminoids as it is sometimes called), we have to consider quality as well as quantity. Protein is essential in all diets because it is the body-builder. When not required for building new tissue, it is still essential for repair of the old. Protein is made up of several amino acids, some of which, at least, are absolutely essential to the animal and must be supplied in the food. The difficulty is that in some proteins some of these essential amino acids are absent, so that we have to be careful in our choice of the protein supply. (A fuller account of the subject by Professor Plimmer will be found in the Jour. Soc. Chem. Industry, June, 1921, Vol. XL., No. 12, p. 227R.)

In practice the quality difficulty is obviated by the use of animal meals.

Our analysis of the bird shows protein to be about 18.7 per cent. If we accept our figures for the utilisation of food we shall see that only half of the food eaten can be utilised for growth purposes in the early stages, and that less is required as time goes on. The other half of the food is doubtless required for energy. The protein requirement will then be 18.7 per cent. of half the food or 9.35 per cent., very nearly 10 per cent. of the total. This gradually decreases to 5 per cent. as the birds gets older and makes less growth in proportion, but is mainly concerned with maintenance.

While 10 per cent. is thus evidently a satisfactory amount of protein, it does not necessarily follow that a higher amount will be injurious or wasted. Much more information concerning protein still remains to be found out. In our statement that the protein requirement may be reduced as the bird gets older, it must be understood that it refers only to maintenance and does not include production. Those birds which are allowed to live so long are expected to produce eggs so that the requirements of the laying hen will merit special consideration later on.

(To be Continued.)

Yew Tree Farm, Horsmonden, Kent.
5th January, 1925.

Dear Sir,—I was once persuaded by a friend to discontinue reading "Eggs," and try another. I did so for **one** week, and at that time I was more than glad to come back to "Eggs," as I can learn more in one copy of "Eggs" than I could in a life-time in reading the other paper.

Yours faithfully,
(Signed) T. J. HARLOW.

EAST ANGLIAN LAYING TEST, 1924-1925.

Report of Second Month, from 13th November to 10th Decembe 1924.

During the second month the total number of eggs recorde was 1,368—a decrease of 13 on the total for the first month. Th decrease is entirely due to the number of birds which have falle into moult, and the expectation expressed in the report for th first month that the low figure would be maintained has unfortunately not been realised. It almost seems that the moult i contagious, and once it appears in a section it is almost impossible to confine it to the birds which are at first affected. Th number of first-grade eggs laid during the period amounts t the very creditable percentage of 70.3, an increase of 10 pe cent. over the figure registered during the first month. Th total number of eggs recorded to date is 2,749. A R.I.R., belonging to Mr. T. H. Sochon, died from shock as a result of th rupture of a yolk into the abdominal cavity. The health of th flock, in spite of the moult, which has affected all sections, excellent.

Leading Pens at the End of the Second Month.
Figures are Eggs and Points respectively.

Section 1. White Leghorns.—Dale Egg Farm, 86, 122; Capt. E. A. Wheeler, 23, 43; Allen Bros., 34, 39.

Section 2. Any Other Non-Sitting Breed.—Miss E. Cavanagh, (Ancona), 60, 76; Major R. Lloyd-George (Ancona), 23, 37.

Section 3. White Wyandottes.—Mrs. Pierce-Grove, 60, 114; S. and T. Greenall, 43, 111; General R. L. Mullens, C.B., 43, 89.

Section 4. Rhode Island Red.—H. Turner, 94, 177; Hasler and Co., Ltd., 57, 134; E. Fearon. 75, 129.

Section 5. Any Other Sitting Breed.—T. H. Sochon (L.S.), 47, 139; Misses D. and M. Keech (L.S.), 67, 116; F. D. Montgomerie (Buff Rocks), 14, 15.

Section 6. Single Bird. Any Variety, Light Breed.—Miss P. Abercrombie (W.L.), 21, 42; W. S. Lane (W.L.), 21, 39; H. Dearden (W.L.), 19, 36; Dale Egg Farm (W.L.), 19, 35; F. C. Tomlinson (W.L.), 19, 30; E. Fearon (B.L.), 20, 30.

Section 7. Single Bird. Any Variety, Heavy Breed.—Mrs. M. Crooks (Buff Orping.), 26. 42; Hasler and Co. (R.I.R.), 18, 33; T. H Aitchison (R.I.R.), 8, 30; J. E. Prentis (W.W.), 19, 28; E. Fearon (R.I.R.), 4, 24.

W. T. WILLIAMS, Hon. Secretary.
Millfields, Rayne, Essex.

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES.

Third Annual Laying Competition, held at the Lancashire County Council Farm ,Hutton, under the supervision of Mr. C. H. Dobbin, the County Poultry Instructor.

SECOND MONTH'S REPORT—13th Nov. to 10th Dec., 1924.

The following are the leading pens in each section, showing eggs and points for the two months:—

Large Breeders (Three Birds)—Section 1.—White Leghorns.—E. Cam, 115, 886; A. C. Harrison, 99, 682; W. Barron, 98, 674; W. Hamnett, 85, 642; J. Booth, 92, 635; Core & Pickover, 106, 618.

Section 2.—Black Leghorns and Anconas.—O. Rawlinson, 83, 564; W. Hamnett, 61, 438; J. P. Willacy, 25, 200; Mrs. J. H. Hill, 22, 166; T. W. Gardner, 24, 160; F. Lord, 19, 90.

Section 3.—White Wyandottes.—J. R. Dawson, 110, 814; P. Williamson, 107, 794; H. Sutton & Sons, 110, 766; W. Hamnett, 91, 712; C. Bates, 91, 700; W. Barron, 115, 680.

Section 4.—Rhode Island Reds and A.O.V. Heavy.—F. Harvey, 107, 812; W. Weardon & Sons, 98, 738; A. T. Walker, 100, 716; Basnett, 81, 636; G. Cobham, 100, 602; R. Moon & Sons, 102, 530.

Section 1.—Light Breeds.—Small Breeders (Single Bird).—J. Stanley, 37, 294; G. A. Wolstenholme, 41, 288; W. Ashton, 33, 252; F. Wilkinson, 40, 242; O. R. Lees, 29, 226; Roskell & Hodgkinson, 30, 218.

Section 2.—Heavy Breeds.—J. W. Pearson, 39, 294; H. Harrison, 40, 264; J. Farron, 32, 222; W. R. Robinson, 38, 218; A. D. Walton, 26, 194; A. Spencer. 24, 186.

THIRD MONTH'S REPORT.—11th December to 7th January, 1925.

The following are the leading positions in each section, showing number of eggs and points for the three months:—

Section 1. White Leghorns (Three Birds).—E. Cam, 151, 1170; A. C. Harrison, 156, 1116; W. Hamnett, 137, 1052; J. Booth, 142, 1035; W. Barron, 137, 974; R. Beesley, 129, 972.

Section 2. A.O.V. Light (Three Birds).—C. Rawlinson, 126, 878; W. Hamnett, 80, 590; T. W. Gardner, 57, 556; Mrs. J. H. Hill, 44, 340; F. Lord, 46, 286; G. E. Leigh, 33, 254.

Section 3. White Wyandottes (Three Birds).—J. R. Dawson, 160, 1202; P. Williamson, 158, 1194; C. Bates, 147, 1152; W. Hamnett, 153, 1192; W. Barron. 164, 1026; J. Edmundson, 135, 892.

Section 4. Rhode Island Reds and A.O.V. Heavy (Three Birds).—F. Harvey, 168, 1294; A. T. Walker, 146, 1074; G. Cobham, 167, 1046; W. Weardon and Sons, 134, 1012; Basnett, 120, 948; T. Braithwaite, 111, 880.

Section 1. Light Breeds (Single Birds).—G. A. Wolstenholme, 52, 456; J. Stanley, 56, 446; W. Ashton, 48, 372; F. Wilkinson, 57, 356; W. Fletcher, 39, 300; H. West, 33, 262.

Section 2. Heavy Breeds (Single Birds).—J. W. Pearson, 60, 462; H. Harrison, 57, 388; W. R. Robinson, 56, 360; A. D. Walton, 43, 330; J. Farron. 45, 320; D. Braithwaite, 27, 214.

E. COLLIER, Organising Secretary.

Modern Poultry Feeding.

By **TOM NEWMAN.**

VITAMIN "A" AND LEG WEAKNESS.

I have received the following interesting letter rom Mr. Salter :—

"I have just been reading in the new S.P.B.A. Register your article on leg weakness, and, as you appear to be collecting evidence as to the cause of the trouble, I thought you might like to have particulars of a rather bad outbreak from which I have recently suffered and its cure. On November 13th and 17th last year I had two hatches, each of rather over 40 chicks (R.I. Reds). They were put into two Miller brooders, one of which had had the floor of the sleeping compartment perforated, the other not. Both were bedded down with loose hay. Both were fed identical rations, i.e., pinhead oat-meal and broad bran to start with, the latter being about the eighth day, replaced by dry mash as follows :—3 parts middlings, 1 part dried milk, dried yeast (5 per cent., increasing to 10 per cent.), and broad bran—in fact, the dry mash used in the Wellingham experiments. We had found this formula (with the addition of cod liver oil) very successful in rearing last spring.

Until the chicks were close on three weeks old, both lots did very well; I only lost one chick, and that had a slight deformity. Then they began to go down with leg weakness, and I lost several daily.

I then tried putting Marmite in the water, and this produced a slight, but only a very slight, improvement. I also ordered at once a drum of cod liver oil. As soon as this arrived, and the oil was mixed in the mash, the chicks began to pick up amazingly. I only lost two or three more, and the survivors, most of whom were very languid and inclined to flop, are now as active and sturdy as one could desire.

I mention this case in some detail, because it seems to me to show that leg weakness, in some cases at least, is due to absence of vitamins A and B, particularly A, and not to any question of ventilation. The chicks in the perforated brooder suffered just as badly as others.

In the springs of both 1923 and 1924 I was feeding cod liver oil in the mash, and in neither spring did I have more than a very small percentage of leg weakness.

As regards the cases you quote on page 40 of the Register, it is to be observed that you do not mention a single case where **both** cod liver oil and dried yeast were used together, but is it certain that dried yeast is the dietetic equivalent of yeast extract?

After all leg weakness in chicks is presumably closely akin to rickets in children, and it is, I think, generally recognised that the two cures for rickets are sunlight and cod liver oil. "I am trying the Wellingham formula containing soya bean meal this season, and if you like will let you know later on how it has answered with us."

I shall be very glad if Mr. Salter will let me know how this soya bean meal formula has answered with him, but he must recognise that when I drew it up it was purely experimental, and, although the results were highly satisfactory, the experiment was on too small a scale to justify my recommending it for everyday use. We shall see what results we obtain this year with a much larger number of chicks, and it will be interesting to see if Mr. Salter's results tally with ours.

Mr. Salter is correct in saying that the recognised cure for rickets is sunlight and cod liver oil, but it is also true that rickets may arise from causes other than dietetic. I think we must recognise that the condition may be caused by deficiencies in the egg from which the chick is hatched; that of course would be dietetic, but we know that the yolk of the egg is rich in the vitamin A, and that this is not wholly absorbed until the sixth day. The absence of Vitamin A causes a cessation of growth, a deficiency would cause rickets. In the Wellingham experiments, 1923, no cases of leg weakness occurred, and in Experiment 4, which gave the best results, no cod liver oil was given. Mr. Salter was using the same formula. Marmite was used at Wellingham in place of dried yeast, but in comparing Experiments V. and VII., in which the same formula was used, with the exception that dried yeast replaced the marmite in VII., the results were a little better with the dried yeast. In my opinion, the supply of vitamin B was always adequate, as it was present in a sufficient quantity in the bran and the middlings, and of course in the yeast and oatmeal. I suggest to Mr. Salter, that in increasing the dried yeast to 10 per cent. we may find some explanation of the cause of the leg weakness. Such a high percentage in combination with the dried milk would form a highly stimulating diet, so that the chicks may have developed too quickly and outgrown their strength. In such a case the highly-nutritious qualities of cod liver oil might do much to counteract the effect of such a stimulating diet. What I would like to know is this, could rickets in young chicks be caused by a deficiency of vitamin A in so short a period as fourteen days? There could have been no deficiency before that period, because the chick has not absorbed the yolk from which it is hatched until the sixth day, and, as mentioned above, the yolk of the egg is rich in this factor. Mr. Salter does not mention whether the chicks were given green food or not. I have never seen a post-mortem report of any chicks which have died from leg weakness, why this should be is inexplicable.

Presumably we simply accept it as inevitable, but it surely would be helpful. Dr. Plimmer has very kindly sent me his booklet, "Some Practical Considerations on the Vitamin Problem in Nutrition," which affords very interesting and instructive reading. It is reprinted from the January issue of "The Practitioner." I note that in writing on Vitamin B, he says :—

> "The most serious loss of Vitamin B occurs in the preparation of white cereals. The whole meal contains ample Vitamin B."

This confirms what I have said on many occasions before, that the poultry-keeper need not worry as to a deficiency of B, for it is present in the bran and middlings, in the whole grain, in maize meal, and ground oats. I suggest to Mr. Salter, that with such a ration as he is using, it would be wise to give kibbled maize with the pin-head oatmeal, in the grain feed. He will understand that I am not definitely asserting that the cause of leg weakness here was a too stimulating diet, it is only a suggestion, but the point is worth discussing as it is interesting and important.

EGG-LAYING COMPETITION.

The competition organised by the Barrow and District Utility Poultry Society has now completed its third period of four weeks, at Thorncliffe Poultry Farm. Mr. G. B. Tootall, who is managing the test, reports that four birds have gone into a partial moult, and two have been broody. There are 24 unrecorded eggs this month. There are three pullets at least who will not lay in the nests, though many attempts have been made to coach them. Four birds have yet to lay their first egg. One bird (No. 24) is suffering from a fractured lower mandible. The egg yield is slightly on the increase, but the bad weather is having a deterrent effect on the output. The feeding has been slightly altered to meet this as far as possible. Method of scoring:—Eggs, 2oz. or over, 1st grade, 1 pts.; 1½oz. and under 2oz., 2nd grade, 8 pts.; under 1½oz. do not score.

The results are as follows (Figures are Eggs and Points respectively for four weeks):—

Section 1. White Wyandottes. Open Class.—Miss M. Newton, 16, 160; Mr. Myles Newton, 19, 160; Mr. William Hatton, 16, 154. Points for 12 weeks:—C. Atkinson, 512; George Waite, 458; Wm. Hatton, 458. Small Breeders: George Waite, 13, 130; points for 12 weeks, 458.

Section 2. (Open) White Leghorn:—J. Tyldesley, 16, 158; T. H. Barker and Son, 12, 116; Miss M. Newton, 12, 112. Points for 12 weeks: J. Tyldesley, 508; J. J. Hardy, 436; William Hatton, 398. Small Breeders: J. J. Hardy, 11, 110; points for 12 weeks, 436.

Section 3. Any Other Variety, Heavy Breed (Open Class):—Hon. M. Cross, 18, 180 (Light Sussex); C. E. Duff, 18, 180 (R.I.R.); T. H. Barker and Son, 17, 152 (Buff Rocks). Points for 12 weeks: Hon. M. Cross, 564; T. H. Barker and Son, 490; A. H. Fox Brockbank, 398, Small Breeders: Wm. Atkinson, 16, 142. 12 weeks: Robt. Atkinson, 340 pts.

Section 4. Open Class, any Other Variety, Light Breed.—C. E. Duff, 19, 182 (Black Minorca); Myles Newton, 15. 150 (Black Leghorn); Hon. M. Cross, 14, 140 (Ancona). Points for 12 weeks: Hon. M. Cross, 380; Myles Newton, 358; W. Fielding (Black Leghorn), 352. Small Breeders: P. W. Davies, total eggs 4, for four weeks 32 points, for 12 weeks 32 points (Black Leghorn).

J. GRAHAM, Secretary.

Barrow-in-Furness.

GLAMORGAN AGRICULTURAL COMMITTEE.

COUNTY EGG LAYING TRIALS, 1924-25.

From 19th October, 1924, to 22nd August, 1925.

Report for Third Month.

Light Breeds.—J. Joshua, Tondu (W.L.), 111 pts.; G. Bundy, Ton Pentre (W.L.), 97; Mrs. E. H. Parry, Llantwit Major (W.L.), 82; Howell and Phillips, Barry (W.L.), 77; R. J. Evans, Abertridwr (W.L.), 83; T. Parry Tucker, Llanrhidian (W.L.), 67.

Heavy Breeds.—J. Joshua, Tondu (R.I.R.), 197 pts.; J. R. Thomas, Barry (R.I.R.), 178; R. J. Evans, Abertridwr (R.I.R.), 168; Harrop-Griffiths and Hall, Bridgend (R.I.R.), 160; J. Joshua, Tondu (W.W.), 133; G. Tucker, Port Eynon (W.W.), 125.

C. F. DUNKLEY, Manager.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

AMALGAMATION.

Our contemporary, "Poultry World," refers in its issue of January 16th to proposals for the amalgamation of the Poultry Club, N.U.P.S., and S.P.B.A. I have heard certain rumours as to this, but can only say that the Council has no official knowledge whatever. It will be remembered that six years ago similar proposals were rejected by our members ; nothing has occurred since that time to encourage the belief that they would be more acceptable now, while the difficulties are immensely greater. Nor has any evidence been submitted which would induce one to believe that it would be to the advantage of the industry or to the S.P.B.A. The National Poultry Council is the best guarantee of the unity of the industry.

IN EXPLANATION.—FECUNDITY.

I have been asked by a Lancashire reader to explain further or more clearly, if I can, my theory as to the inheritance of fecundity. I do not claim to have any theory as to its inheritance, so at the risk of boring my readers will endeavour to explain my meaning as concisely as possible. :—

(1) In the good and bad layer, the number of ovulas or potential eggs is approximately the same.

(2) All hens are fecund—that is, all hens lay some eggs.

(3) The highly-fecund hen does not inherit high fecundity ; all she inherits is the **power** to give full expression to the character—fecundity.

(4) The power to give expression to this character depends entirely on her physical constitution.

(5) She does not transmit her fecundity through her sons, she may transmit through them her physical constitution which will enable her daughters to become highly-fecund.

I will try and put a suppositious case. We have all heard of Galton's Law. He announced that the two immediate parents contributed between them one-half of the effective heritage, the grand-parents one-fourth, the great grand-parents one-eighth, and so on. However true this may be, we know that the characters of either parent are not present in equal proportions in the progeny. That is to say, that the individual may inherit more from the one parent than the other.

If we take a 240-egg hen, and mate her to the son of one with a record of 150 eggs, we know we shall get great variation in the progeny; we may get a few which will lay nearly as well as their dam, we shall certainly get some which will lay less than their sire's dam. We know that both the dam and the sire's dam had approximately the same number of ovulas or potential eggs. Then why is there this great variation? My suggestion is that those pullets which laid nearest to their dam's record inherited as nearly as possible her physical constitution, and the number of eggs laid by all the progeny depended on the degree in which they inherited the physical constitution of the sire or dam, which inhibited or permitted the fullest expression of the character—fecundity.

To give a rough example, if the pullet laid 220 eggs we would give her seven-eighths of her dam's physical constitution and one-eighth of her sire's. If she laid 40 eggs only, then she would inherit seven-eighths of her sire's physical constitution and one-eighth of her dam's. That is as clear as I can make my meaning. When I use the term "physical constitution," it must not be confused with bodily conformation.

NORTHERN IRELAND LAYING TEST.

The report of the Second Laying Test, conducted by the Ministry of Agriculture, Northern Ireland, which concluded on the 15th September, 1924, is to hand.

The pullets entered were, on the whole, of good quality and type, but with the increased number of competitors, many of whom were novices, there was a higher proportion of backward pullets, and many others had been laying too long before dispatch, this possibly explains why the average production fell from 188.9 in the previous year to 181.6.

White Wyandottes have again beaten all breeds, winning the cup for the best pen in the Test, Silver Medal for the best pullet in the Test, the Ministry's Winter Egg Prize, and the Silver Cup for the best winter egg yield presented by the S.P.B.A.

Attention is drawn to the tendency of the Wyandotte to lay small eggs, and the sound advice is given that no hen laying an egg under 2 ozs. should be given a place in the breeding pen; and no hen whose egg barely reaches 2 ozs. is good enough to breed cockerels to head these pens. I quote the following because it will be so helpful to those who are anxious to improve size of egg :—

> "There are grades of 2 oz. egg hens. Many reach this standard within a few weeks of beginning to lay, but there are others, and often the heaviest layers, which lay perhaps 200 second grade eggs out of a yearly record of 250. It is here the danger arises. With a record of 250 the long score of second grade eggs is forgotten, the hen finds a place in the breeding pen, and her sons in many other breeding pens, so perpetuating the big percentage of small eggs."

Miss R. B. M'Cormick's winning pen laid 1,408 eggs in the 48 weeks, an average of 234.4 eggs per bird. The average weight per dozen was 24.6 ozs. The percentage of small eggs was attributed to the introduction of a new cockerel. Miss M'Cormick has been a very consistently successful competitor in the tests, in ten years she had won eight first-class certificates (a pen of six pullets must lay 1,200 eggs in eleven months to gain these certificates), three first prizes, three second prizes, three prizes for the best winter egg yield, and one special prize for the best pullet. It is interesting to note that all her pullets were in lay at the conclusion of the test, and their records in the last four weeks are rather remarkable, being 18, 21, 20, 21, 20 and 13 respectively.

Second position went to Mrs. W. S. Benson, with 1,293 eggs; third to Mrs. Mitchell, with 1,185. This pen was remarkable in the fact that two of the pullets laid only 102 and 106 eggs respectively, the former laying only 5 eggs after April 1st. It contained three pullets with individual records of 260, 230 and 245, and one of 248. The pullet with the highest record laid only 6 second grade eggs, and in the last four weeks laid 24 eggs.

The report states that White Leghorns, while showing an undoubted improvement, had still a high proportion of undersized and weedy birds, and the death rate was too high. The average production was 180.4, a slight improvement on the previous year. The first three positions were taken by Mrs. Workman, whose pen laid 1,289 eggs, Mrs. E. Marshall, with 1,172, being second, and Miss M. Marshall third, with 1,144.

In non-sitting breeds other than White Leghorns, Mr. Jas. Cowie won easily with a pen of Blacks, which laid 1,223 eggs, and were all in full lay at the conclusion of the test, and are described as being of "outstanding merit," the plumage at the close being as bright and glossy as if they had only just begun to lay. A tribute to their vitality.

It is interesting to note that a pen of Andalusians took third place with the good score of 1,075 eggs.

In the section devoted to sitting breeds other than White Wyandottes, the first three places went to Mrs. C. H. Irwin, Miss N. Ewart, and Mr. D. Freeland. Mrs. Irwin's pen laid 1,230 eggs. R.I. Reds in each case.

Barnevelders were only represented by one pen. One pullet died at the end of the third period, the remaining five laid 920 eggs, all of good size and colour, the average weight being 27.45 ozs. per dozen.

DUCKS.

Fifty ducks competed in the test, five in each pen, four of White Runners, three Khaki-Campbell, two Fawn and White Runners, one Coaley Fawn. The winter egg yield was extremely satisfactory. Towards the end of May isolated cases of "staggers" occurred, and by the end of June 14 ducks were affected. As no satisfactory cause could be discovered for the condition they were divided into two groups and treated for supposed malnutrition, viz.: (A) Deficiency of vitamin A; (B) deficiency vitamin B; (C) deficiency of Calcium Salts. Some in each group recovered quickly, and only one succumbed. There is, however, some reason to suppose that constant rain, together with lack of sunshine, played some part in causing the trouble, the ducks being under trees.

The average production was 168.5 eggs per duck. Cost of food 15s. 6d. Average consumption of food as compared with pullets, 137 lb. to 85 lb.

The three winning pens were the property of Mrs. Marshall (W.R.), 1,092 eggs; Mrs. Bell (K.C.), 1,067; Mrs. Stewart (K.C.), 1,037.

What our Readers think of "Eggs."

21, Meadow Street, Atherstone.
14th January, 1925.

Dear Sir,—I enclose cheque value 12s. 8d. for one year's subscription to "Eggs." I don't know what I should do without it. It is well worth the extra postage to get it regularly on the same day of the week, without having to go to the newsagent for it. From what I have seen of the other poultry papers they are not to be compared with "Eggs." They contain too much of the same thing, hashed up over and over again; very rarely anything that is new—generally six months or more behind "Eggs."

Yours faithfully,
(Signed) F. E. HIORNS.

"Ashmead," Garstang, near Preston.

Dear Sir,—I would like to add my appreciation of your efforts in making "Eggs" so useful and interesting to poultry-keepers. I look forward each week to receiving my copy, and am always sure to find something new and helpful to me. I have long ago ceased to take other poultry papers, as I find that the help one gets from "Eggs" is far more reliable. I wish you, "Eggs" and the S.P.B.A., a very prosperous New Year.

Yours sincerely,
(Signed) W. R. LORD.

White Knight Poultry Farm, East Farleigh.
12th November, 1924.

Dear Sir,—I may say that I am giving up all other poultry papers, as I find "Eggs" is worth all the others put together.

Yours, etc.,
(Signed) F. S. MORGAN

BRIGHTON STOCK TEST REPORT.

For the Months of October, November, December, 1924.

R. Mummery (11 W.W.), 370 pts.; Besford Egg Farm (9 W.W.), 274; Countess Buxton (14 W.W.), 402; Chisbury Poultry Farm (13 W.W.). 465; —. Soames (9 R.I.R.), 349; Capt. Woodford (14 R.I.R.), 522; B. Glendenning (5 W.L.), 170; Capt. M. S. Close (13 W.L.), 440; Misses Allen-Smith (14 W.L.), 520; R. Scott-Miller (8 W.L.), 288; Capt. A. Beckett (12 W.L.), 428; Mrs. G. L. Gibson (13 W.L.), 494; Chisbury Poultry Farm (10 W.L.), 322; D. Brown (10 W.L.), 320; Major Shepherd (15 W.L.), 491; D. W. Gunston (12 W.L.), 400; Duke's Poultry Farm (17 W.L.), 459; W. Bradbury (16 W.L.), 556; Misses Ransford (15 W.L.), 421; Mrs. G. L. Gibson (17 B.L.), 470; Duke's Poultry Farm (18 B.L.), 510; Misses Allen-Smith (13 B.L.), 434.

JOHN H. DOWDEN, Heathfield.

Some Fruit-Growing Notes

to help Poultry-Keepers.

By **F. W. WHEELER, F.R.H.S.**

TWO FRUIT TREE DISEASES. — Judging by a letter I have received from a regular reader, I think I might take my cue for to-day's notes from what he writes respecting two diseases that are giving a good deal of trouble, and as these are frequently met with, some fuller details, beyond a brief reply, might be of wider interest.

The troubles in question are: (1) Woolly Aphis, or American Blight, and (2) Canker.

Taking No. 1 first. This is most easily recognised in the summer by the appearance of what looks like small pieces, or patches, of cotton wool on the bark of apple trees, and usually found at first on damaged parts. In the winter the insect exists as a purplish-brown adult in crevices.

It is most important to attack this pest before it has a hold, for then it can generally be kept under control, or even completely cured. The insects suck out the sap, and produce wounds, rendering the trees very liable to canker and other fungoid diseases, thus making it all the more important to wage war immediately it is noticed.

There seems little doubt that your troubles ("B.," Cornwall) started through the neglected old orchard of your neighbour's over the hedge, and which, from your description, must have been a hot-bed of disease. Of course, if only small cases of Woolly Aphis have to be dealt with, one of the best things to do is to paint the places with methylated spirit, but if the trouble has obtained a hold, then we want a hard and larger bush brush, so that we can scrub the infected parts with a paraffin emulsion, using ¼lb. soft soap dissolved in water to a thickness of cream, and well stir into this two pints of paraffin (by this method water and paraffin will easily unite).

The spraying of trees in the winter months with caustic washes, if thoroughly done, is a great help in combating the trouble and tackling the hibernating insects.

Now, as most fruit growers are up against a similar risk of infection, by wind-borne adults (from other persons' neglected trees), it may be useful at this point to give a combined insecticide spray, recommended by Long Ashton Research Station, for use at the end of April or the beginning of May:—

Soft Soap: 4lbs. to 5lbs.
Paraffin: Two quarts.
Nicotine: 2ozs.
Water: 25 gallons.

and they say that they found that if this is applied when the trees are in the right condition for spraying for aphis, apple sucker, and caterpillars, it does a double job at one expense.

I further gather from my correspondent's letter that he has a bad attack of this American Blight, and several years' standing, and I fear that it has a yet rther hold of his trees than merely on the branches. should imagine that the roots are also infested. The oolly Aphis lives below ground in winter, and often ease banding has to be resorted to, in order to stop he migration from roots to branches in Spring.

In these root cases we have a bigger matter to deal ith, and a special soil treatment is often required, amely, a syringe injection of carbon disulphide. ometimes the surface soil can be removed, and the oots wetted with the caustic winter emulsions, this tter remedy, being much more simple, might be ied first.

Naturally the wall trees have the disadvantage of sects harbouring in the rough surface and holes, so the raying operations would be almost imperative and good drenching given.

We often read about the harm birds do to our fruit, ut we must not forget the good. For instance, the lue Tits do inestimable good by devouring the pest nder consideration.

Coming to the second trouble, "Canker," we have ne often traceable to unsuitable subsoil conditions, where there is heavy and water-logged ground. In is latter case (if one is only putting in a few trees r home use), high planting will greatly help to keep f the trouble, but "Canker" will soon attack eglected trees, especially where wounds arise through sects, or branches left to rub either against one nother; or it may be the stakes left too high, and with gged tops; or, again, it might be wounds unintenonally caused by the pruning knife. (Cox's Orange ippin and Ribston Pippin are varieties subject to this sease).

The symptoms, we shall notice, when examining e trees, are that the bark seems eaten away, and the uter edges of the sores rough and swollen, the bark ark brown (soft and rotten). If left this spreads und the stem, and the branch shows signs of beginng to die away (at first fruit buds may develop, but e shall not have any healthy new wood growths). n the smaller shoots, twigs, or buds we see in places nasty discolouration of the bark and a similar dying ay as follows.

As with all diseases, the great thing is to attack it rectly it is noticed, and to stop the spreading, or it ay easily get beyond control, and trees must then be rnt.

Where thick stems are infested on one side, the maged parts can often be cut away until we get back clean wood, and the wounds dressed with Docklm tar. These will heal up nicely. If the canker s gone all round the stem, it is useless to try and re it, and the branch must be cut off, well below e infected part. It will be noticed, when cutting ay cankered parts, that the sap in wounds goes a ep orange colour.

Have a sack on the ground under the trees to catch e peelings when cleaning up sores, and burn these d all branches or twigs cut off; also have handy a or can with paraffin, or carbolic acid, into which e knife can be dipped to disinfect it, otherwise it is easy to carry the disease to clean parts of the trees while engaged in general pruning work.

A winter dressing of large wounds, and a spraying with a copper sulphate solution (Bordeaux mixture) is a most important part in the fighting of the canker trouble. Bad cases have been successfully treated by perseverance in these combined methods, and practical wrecks restored to fruitfulness. Damp places and districts with excessive moist atmospheric conditions increase the trouble when once it starts.

I know when reading about insect pests and fungoid disease, and all the various sprays or chemical required to combat these, it is often thought "what a chemists' shop I must keep to meet all cases," but actually it is a simple matter, because not only can we buy the compounds ready mixed for diluting to the required spraying strengths, but they are prepared better than we could do it ourselves.

There are many makers putting the various spraying mixtures on the market, and most of them give, in their price list, not only how and when to use, but also the special purpose of the spray mixture.

The fighting of diseases might seem a nightmare to be dreaded (if one saw some orchards), but if poultry-keepers, starting fruit growing, will remember that there is nothing to terrify them, any more than poultry diseases do, as long as we do not let them get a sure foothold through neglect.

Two leaflets by the Board of Agriculture and Fisheries, Whitehall, London, Nos. 34 and 56, deal extensively with Woolly Aphis, and Canker, which are most interesting reading as well as useful and instructive.

I think "B" will find that the spraying with a "Winter Wash," or Lime Sulphur, will rid his trees of the "green on the bark," which he says he can "scrape off with his thumb nail," especially if applied during a spell of fine weather and drying winds. For sure the moisture-laden air of his district causes the excessive green on bark.

Coming to the question of subsoil, with "killas" and "elvan," I can understand he is up against root action troubles, and would strongly advise him to consult his local Agricultural Organiser, Education Department, County Hall, Truro, especially if he thinks of putting in more trees.

Respecting the "Big Bud" trouble on Black Currants. There is no certain cure. If bushes are badly infested, cut away those parts and burn. If some good stems have only a few, remove these round buds with a sharp penknife, close to the stem, but do not leave them on the ground. Spraying with Lime Sulphur, as usually sold, and mixed to a strength of one to twelve or sixteen parts of water, does check the spread of the "mites," and this should be done when the leaves are opening in the spring. If your bushes are old, I should see about some new ones, and grub and burn the infested lot. Perhaps the "blistered leaves" of the red currants were caused by the cold east winds when they were young and tender, but your description is too brief to allow me to say much on this, or to gather whether it was a "mite" or "blight" at work.

OUR FRONT COVER.

The laying records of ducks have been almost startling, but we doubt whether there are any equal to the pen of Fawn and White Indian Runners, the property of Mr. S. Huxley, Bryngomer Poultry Farm, Pontrhydyrun, near Newport, Mon., which is depicted on our front cover this week.

Here we have individual records of 316, 300, 340, 329, 305, 334, 354, being an average of 325 eggs per duck in 365 days.

The drake is the son of a 301-egg dam, and with four others he was mated with 15 trapnested ducks (divided into five pens), the progeny of which were trapnested during October, November and December last in order to find out which drake gave the best results, so that the prepotency of the one selected has been very definitely established.

Duck No. 84 laid 354 eggs in 365 days, which is claimed to be an English record.

The seven ducks are the same blood as the birds which won the Second Prize in the 1923 Wye College Test.

All the ducks of this strain have been trapnested by Mr. Huxley for the past three years.

It is most unnecessary to say that they have been selected for stamina as well as performance, otherwise such records as we have here could not have been obtained.

The Scientific Poultry Breeders' Association.

KEIGHLEY AND DISTRICT BRANCH.

The Keighley and District Branch of the Scientific Poultry Breeders' Association held a successful Egg Show in the Temperance Hall, Keighley, on Wednesday, January 14th. Mr. E. Croft, Hessay, York, judged the exhibits, which were exceptionally good, and evoked favourable comments from Mr. Croft. Awards were: Class 1, First and Special, S. Hartley (Haworth); second, Ed. Hodgson (Oakworth); third, F. Snowden (Cowling). Class 2, First and Special, S. Preston (Haworth); second, Wright and Fortune (Keighley); third, H. Reynard (Keighley). Class 3, First and Special, A. Holroyd (Thornton); second, Miss Marsden (Keighley); third, Mrs. Murgatroyd (Riddlesden). Class 4, first, J. Fisher (Cowling); second, E. Hodgson; third, G. Wilson (Denholme). Class 5, cancelled. Class 6, First and Special, G. Davy (Sutton); second, J. Greenwood (Oakworth); third, E. Hodgson. The Specials were three sittings of eggs given by Mr. Croft and one sitting from Mrs. Wilson (Denholme). After awards had been made the eggs were sold, the highest price realised was 17s. 6d. for six eggs from Mr. Frank Snowden's gold medal White Leghorns, Mrs. Wilson being the purchaser.

After the Egg Show Mr. Frank Snowden presided over a fairly well attended meeting, when Mr. Croft gave a lecture on "From Shell to Maturity." The lecture proved very interesting. Much valuable advice was given, and many useful hints with regard to rearing poultry.

APPLICANTS FOR MEMBERSHIP.

Strother, Mrs. S. del, Mount Leven Farm, Yarm, Yorks.
Brown, R. F., Preston House, Preston, near Canterbury, Kent.
Spencer, E. W., New House Farm, Little Bromley, Manningtree, Essex.

Allen, D. F., Priesthood, Harvel, Gravesend.
James, R. S., Rosedale, Alton Lane, Four Marks, Hants.
Sadler, Lt.-Col. J. Hayes, White Coppice P. Farm, High Hurstwood, Uckfield, Sussex.
Adcock, Mrs. M., Grenehurst Park, Capel, Surrey.
Wiltshier, E. R., The Poultry Farm, Queen Mary's Avenue, Carshalton.

Brown, Thos., Cardington, near Church Stretton, Salop.
Walker, S., c-o Messrs. Geo. Ward and Co., 10, Drury Lane, Liverpool.

Blackpool and District P. Keepers' Trading Society, Hawes Side, Marton, Blackpool.
Ford, G. H., New Springs Farm, Talke, Stoke-on-Trent.
Shepherd, Jay, Shepherd's P.F., Ainsdale, near Southport.
Cottingham, Miss, "Houdan," Chelmsford Road, Wickford, Essex.

Conley, Wm. N., Brabourne West, near Ashford, Kent.
Harrop, F. Beresford, Kimlahi Farm, Simla S.W., India.
Burrow, W. C., Millhama, Awliscombe, near Honiton, Devon.
Webb, T. S., Spring Vale P. Farm, Ardleigh, Essex.
Chambers, Mrs. E. M., Shelley Avenue, Wickford, Essex.
Young, D. J., Roneval House, Leverburgh, Invernesshire, Scotland.
Loving, Mrs. E. A., Claverhambury Farm, Waltham Abbey, Essex.
Waterhouse, Lt.-Col. T. F., D.S..O, Home Stall Farm, High Halden, Ashford, Kent.
Harke, Miss K., The Barn, Parham, near Wickham Market, Suffolk.
Brogan, Jas. J. 68a, Ravenstone Road, West Hendon, London, N.W.9.
Grubbe, Miss N. M., Raybourne Cottage, Church Lane, Little Burstead, Billericay, Essex.
Mills, Marshall, Lodge Farm, Wymeswold.
Drew, F. Milman, Blackbirds Inn, Sudbury, Suffolk.
Foster, Guy F., Burn Ground, West Hatch, Taunton.
Ogden, Albert, Stoneleigh Hall, Derter, Oldham, Lancs.
Kean, John, New Road, Mauchline, Ayrshire.
Myatt, Miss E. D., Audmore Cottage, Gnosall, Stafford.
Gudgeon, D. Neil, Hazlewood, Basingstoke, Hants.
Harris, W. J., Eastbourne Road, Gt. Austell, Cornwall.
Knowles, Frank S., "Westfield," Tunstall, Roos, Hull.
Wilson, —, 18, Grange View, Millhead, near Carnforth.
Warren, Mrs. J., Valley View, Idridgehay, near Derby.
Mountain, Miss S., Woodhurst, Crawley, Sussex.
Morrison, John, 168, High Street, Kirkcaldy.
Jack, Capt. A. J., King's Court, Burwash Common, Sussex.
Hackinley, H., 62, Langroyd Road, Colne, Lancs.
Frankland, Miss, Green Lane Farm, Langley, Maidstone, Kent.
Drummond, David, Muir of Thorn, Bankfoot, Perthshire.
Myatt, Arnold C., Manor Farm, Whitgreave, nr. Stafford, Staffs.
Torbell, Miss I. V., Red House, Lowgate, Eye, Suffolk.
Kemp, Kenneth, Wayford Hatch, Stalham, Norwich.
Nicholl, J. M., Braehead Farm, Paisley, Renfrewshire.
Moody, Wm., Lock House, Poyntzpass, Co. Armagh, Ireland.
McCaig, Miss B., Scottish Laying Test, Roslin, Midlothian.
Hamilton, Miss Hope C., Brookland, Langloan, Lanarkshire.
Rounce, Miss D. F., Woodlands, Rickmansworth.
Oxley, John H., Downside, Lelant, Cornwall.
Morrison, Wm., "Glasswater House," Crossgar, Co. Down.
Bailey, H. A., "Nesscot," Four Marks, Hants.
Flintoff, M., Carburton Manor, Ollerton, Newark-on-Trent.
Taylor, Richard C., Nant Clwyd, Prestatyn, N. Wales.
Broughton, Jn. Wm., The Crest P. Farm, Dalton, Thirsk, Yorks.
Hodgson, Jas., Tan Yard Farm, Woodplumpton, Preston, Lancs.
Wood, B., Ann Tuk Villa, Middleton, near Bognor.
Mather, Edwin, Diamond Farm, Plumbley, nr. Knutsford, Ches.
Snowden, E. T., 3, Commercial Street, Hebden Bridge, Yorks.
Webster, Robert, Ormskirk Road, Rainford, near St. Helens.
Thompson, Miles A., Boughton, King's Lynn, Norfolk.

HOUSING—SOME EXPERIENCES.

By E. E. BARWELL.

As recently as November, 1920, I started poultry-eeping, and, seeing the large prices asked by akers for poultry houses, I decided to try and ake my own.

My first house was of the lean-to type, 10 ft. by ft., 6 ft. in front and 5 ft. back, with glass bstitute for windows. The whole was made of lt on quartering, with a wooden floor made of untry-cut boards. This house, although very ater-tight, I found was too hot in summer and ry cold in winter, so is now only used for surplus ckerels. The felt was very expensive, and the use cost little less than one made of wood.

My next attempt, in April, 1921, was three uses of the lean-to type, 15 ft. by 7 ft., 6 ft. ont and 5 ft. back. For these I used ¾ in. atchboard throughout, except the roof, which as only felt on quartering. These houses were uch more satisfactory, except the roof, where the lt started to sag in the very hot weather. Besides is, on very cold nights the felt was no protection gainst frost. On two of these houses I have put in. matching covered with felt. This has proved tter, although I do not consider it thick enough. lass substitute was again used in the place of ass for windows, and has to be replaced every ar.

In November, 1921, I built a larger type of lean- house, measuring 21 ft. by 12 ft., 7 ft. front d 5 ft. back. This was made of ⅝ in. matchboard tirely, with glass for windows on the south side ly. As in previous houses, in this house over e perches I padded the roof with 4 in. thickness straw. This proved a great success in keeping e birds warm on very cold nights. The follow- g November, 1922, I built a similar house, with e same satisfactory results. In the spring of 22 I used the house I had made the previous vember for chicken rearing, with two 150 chick e hovers. I lost a very large number through ill. However, in November, 1922, after build- g the house already spoken of, I made two icken houses, 6 ft. by 5 ft. by 6 ft. front and ft. back, and lined them inside with felt. These oved a great success for chicks until three or ur weeks old, when they were transferred to me larger houses.

In January, 1924, I thought I could improve on e lean-to type of house and built two span-roof uses, one 33 ft. by 12 ft. and one 48 ft. by 12 ft., ft. at eaves and 8 ft. at ridge, with windows ck and front. I put windows in back and front cause I found that the birds always scratched ay from the light, and consequently all the litter in the houses got heaped up at the back, leaving a considerable floor space in front, with practically no litter in which to scratch. The span-roof houses were made of ½ in. country-cut for sides and felted over; the roof was of ¾ in. country-cut with felt over and ridge ventilation, the floor was made of ⅝in. matchboard. The windows of these houses were of glass, measuring 3 ft. 6 in. by 2 ft., and there are four each side in the smaller one, and six each side in the larger one. On the south side, the bottom of the windows are 3 ft. from the ground; on the north side they are 1 ft. from ground. These windows are fixed at the bottom and made to fold inwards, so that when fully open there in 1 ft. at the top of each for the air to flow in. On the north side are the dropping-boards, which are 3 ft. wide and made of felt, and they are 3 ft. above the ground, so that the windows on this side are underneath the dropping-boards. These windows are generally fully open at night, the fresh air coming in flows into the middle of the house and out at the ridge, taking with it any foul air given off by the birds at night. These houses I consider in every way most satisfactory; plenty of ventilation without draught, and perfectly dry as they are felted all over. The floor is made of ⅝ in. matching. All felt is put on with nails and plaster laths, and never moves, although situated in a very exposed position nearly 600 ft. above sea level.

The felt used is what is known as 2-ply, and can be bought in short ends, 24 yds. by 1 yd., costing 12s. 6d., carriage, etc. This type of house costs no more than one made entirely of ⅝ in. matching.

For chickens I use houses 6 ft. by 5 ft., 6 ft. front and 5 ft. back. These hold 100 chicks each, put under 150 chick size hover until they are three weeks old, when they are transferred to houses of the span-roof type measuring 12 ft. by 8 ft., made in the same way as my larger houses. The advantages of the very small chicken houses are that they can easily be moved to a fresh piece of ground for every batch of chicks.

I should have said that all my lean-to type of houses had suitable weather-boards fitted, and that all houses have been made in sections.

The conclusions I have come to are:—

(1) Houses, of course, must be level, and should, I think, face about S.E.

(2) Have windows back and front.

(3) Nothing less than ¾ in. boards for the roof; it helps to keep the frost out.

(4) Have matchboard floors, so that no grain can fall through to encourage rats.

(5) Glass windows are far cheaper in the long run than glass substitute. Use ¼ in. glass.

(6) I prefer span-roof to the lean-to type of house.

(Continued at Foot of Column on Next Page).

Correspondence.

WHALE MEAL.

To the Editor of "Eggs."

Dear Mr. Newman,—The remarks in "Eggs" last week with regard to Whale Flesh Meal bring to my mind the fact that the same thing was mentioned some time ago in your paper, and I had then made up my mind to write you in the matter, but it somehow slipped me.

I was quite under the impression that Whale Flesh Meal and its effects were well known, as it must be upwards of ten years ago when I first used it.

I bought one or two fairly large lots, and I believe the oil content was about 17 per cent.

I well remember that some time after the stuff had been worked up into poultry and pig mashes we had complaints about both eggs and bacon tasting "fishy."

I think there must have been something in it, as I have a faint recollection that I had fish with my eggs and bacon on several occasions.

The Whale Flesh Meal was then obtained from America, but I have not used it since the supply of decent fish meal became normal.

Writing of feeding stuffs, I see mention has been made in "Eggs" that Dried Yeast and Fish Meal is exported to other countries, and this fact keeps the price of these goods high here.

Of course the same thing is often said about wheat offals, and it is quite correct. But it seems foolish of your readers to harbour the idea that the manufacturers of different classes of feeding stuffs export their goods to other countries for the express purpose of keeping prices up here.

What any sane or live manufacturer does is to look round for the best market, whether it be in this or any other country.

What we want to get at is: Why can our Continental neighbours afford to pay higher prices for certain classes of feeding stuffs than we, and yet beat us in our market in the sale of bacon and eggs?

Yours faithfully,
FRANK SHEARN.

We had not suggested that the foods were exported for the express purpose of keeping prices up here.—(Editor).

HOUSING—SOME EXPERIENCES.—Continued.

(7) Make windows to close from inside. It saves a lot of trouble in wet weather.

When ordering timber, order the lengths you want, or multiples, it saves a lot of waste. Be quite sure when making a house that the wood is quite dry, or else in the hot weather it will shrink and will leave a space between each board.

If any members are interested, I shall be pleased to show them the houses.

YORKSHIRE FEDERATION OF POULTRY SOCIETIES' LAYING TEST, 1924-25.

Report for the Third Month—13th Dec. to 9th Jan., 1925.

The Manager again reports an increase in the number and size of eggs laid, the total this month being 7,708, an average of 13 per bird. Two deaths have occurred, both White Leghorns, Nos. 439 and 57, the former from rupture of a heart valve, and the latter from enlarged liver. There are very few sick birds, and no disease of a serious nature in the Test.

The individual bird scores are not specially high this month, but some interesting records are being put up in the size of eggs. One bird in Pen 8 has laid 19 eggs of 2½ozs. each, and in Pens 19, 36, 55, 68, 74, and 80, with egg totals from 87 to 99 ,the weight in each case is more than the average 2ozs., showing that numbers and size are possible at the same time and in the winter months, thus giving their owners the benefit of the highest prices.

The highest individual bird in the Test to date is Dr. Helm's No. 205, with 70 eggs to her credit, though she is closely followed by two birds with 69 each. It will now be possible for every competitor at the end of this first quarter to see his position in regard to the Silver Trophies.

The weather has been almost uniformly bad for the birds, strong winds prevailing, with much rain and one heavy hailstorm, the last two weeks being so severe that it has caused a slight check in egg production. especially among the light breeds. In spite of the weather the grass is in almost perfect condition. It is being regularly grazed by sheep, which is a great help in this direction.

In last month's report the death of No. 274 should have read No. 217.

The leading pens to date are as follows. (Figures are Eggs and Points respectively:—

Class A. Section 1.—Mrs. Clay, Long Preston, 314, 307; R. H. Fryers, Bradley, Keighley, 290, 286; Mr. and Mrs. Wade, Bishop Thornton, 269, 261.

Class A. Section 2.—R. Rodwell, Nelson, 257, 252; A. White, Malpas, Cheshire, 226, 232; W. Sharp, Bell Busk, Leeds, 202, 213.

Class A. Section 4.—Dr. J. E. Helm, Newchurch, Lancs., 318, 311; Mrs. Clay, Long Preston, 270, 285; Mrs. Alec Wilson, Garth, Brecon, 239, 244.

Class A. Section 5.—Sutton and Son, Little Hoole, Preston, 213, 234; M. A. Hindmarsh. Skelton, York, 209, 212; Mrs. J. Shaw, Otley, 192, 186.

Class A. Section 6.—Davey and Son, Sutton, Keighley, 242, 253; Wright and Fortune, Keighley, 213, 215; F. R. Welch, Bewdley, Worcs., 157, 150.

Class C. Section 9. Any Variety Light Breed. Single Bird Section.—Wm. Wharton, Keighley (W.L.), 63, 62; Hugh Kershaw, Keighley (W.L.), 58, 62; R. and A. Johnson, Chalford, Glouc. (W.L.), 59, 61.

Class C. Section 10. Any Variety Heavy Breed. Single Bird Section.—Alf. Sawyer, Crosshills, Keighley (R.I.R.), 60, 66; M. E. and A. Robinson, Bawtry (L.S.), 62, 64; Mrs. Hawkesworth, Pool (W.W.), 59. 63.

THE YORKSHIRE FEDERATION INTERNATIONAL LAYING TEST.

HELD AT OTLEY.

First ten positions in Class C. of members of the Keighley and District Branch of the S.P.B.A. Specials offered to them only. Third month, December 13th to January 9th, 1925. Figures are Eggs and Points respectively:—

Section 9. Light Breeds.—Wm. Wharton (Keighley), W.L., 63, 62; H. Kershaw (Keighley), W.L., 58, 62; S. Hartley (Haworth), W.L.. 59, 56; S. Preston (Haworth), W.L., 49, 51; J. Paget (Utley), W.L., 44, 45; J. Fisher (Cowling), Bk. L., 42, 43; Wright and Fortune (Keighley), Ex. L., 43, 43; Wm. Wharton (Keighley), W.L., 37, 40; J. H. and W. Brayshaw (Keighley), W.L., 40, 38; H. Kershaw (Keighley), W.L., 33, 32.

Section 10. Heavy Breeds.—Alf. Sawyer (Crosshills), R.I.R., 60, 66; Mrs. Hawkesworth (Pool), W.W., 59, 63; J. Brown (Glusburn), R.I.R., 60, 59; Wright and Fortune (Keighley), W.W., 58, 59; H. Downsbrough (Bradshaw), W.W., 58, 57; Fred Slee (Keighley), Bf.R., 49, 52; H. Downsbrough (Bradshaw), W.W., 50, 49; C. Macaulay (Keighley), R.I.R., 52, 49; Miss Taylor (Cullingworth), W.W., 51, 46; J. H. and W. Brayshaw (Keighley), W.W., 44, 45; Tom Marks (Somerset), L.S., 35, 35.

EAST GRINSTEAD POULTRY ASSOCIATION.

The members of the above Association are looking forward to another visit from Mr. Tom Newman on Thursday, 5th February, when he has promised to lecture on "Chicken Rearing."

The meeting will be held at 6.30 at the East Grinstead Institute, and any poultry-keepers in the district are invited to attend.

E. M. LAMBOURN, Hon. Sec.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING FRIDAY, 23rd JANUARY, 1925.

GRAIN AND FEEDING STUFFS.—English wheat is in moderate supply and is dearer at Liverpool and London, and now averages 13s. 8d. per cwt. as compared with 13s. 6d. a week ago and 10s. 4d. in the corresoponding week of last year. Imported wheat is in moderate demand and prices show an appreciable advance on the week. Quotations for British malting and feeding barleys are unchanged, while foreign record little alteration except at London, where, with a dull trade, prices are slightly easier. Fine samples of English white oats are in demand for seed purposes, and prices have advanced 3d. per cwt. at Bristol and Liverpool. Foreign oats sell at about late rates, except Argentine at London, where they are cheaper owing to recent arrivals. Maize is freely offered and is cheaper at all markets.

A fair trade is passing for milling offals, and bran is dearer at Liverpool and London, and now averages about £9 per ton, while coarse middlings are cheaper and average £9 17s. 6d. per ton, as against £7 18s. 6d. and £9 respectively at this time last year. Meals are mostly unchanged, but any price changes are in favour of buyers.

MILLERS' OFFALS.—Bran (British): Bristol, £9 5s; Hull, £8 7s; Liverpool, £9 10s; London, £8 15s. Broad Bran: Hull, £10 7s; London, £10. Middlings—Fine (Imported): London, £10 7s; Coarse (British): Bristol, £10 10s; Hull, £9 15s; Liverpool, £9 15s; London, £9 10s. Pollards (Imported): Bristol, £8 12s; Hull, £8 10s; Liverpool, £8 2s; London, £8 15s. Rice Bran: Bristol, £9 15s; Liverpool, £9 2s. MEAL.—Barley Meal: Bristol, £13; Hull, £12 18s; London, £13 7s. Maize Meal: Bristol, £12 12s; Hull, £12; Liverpool, £12; London, £11 12s. Maize Meal (S. African): Hull, £11; Liverpool, £11 5s. Maize Germ Meal: Bristol, £12 5s; Hull, £11 5s; London, £11. Maize Gluten Feed: Bristol, £12 5s; London, £11 5s. Locust Bean Meal: Bristol, £9 7s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £14 5s; Hull, £13 8s; London, £14. Fish Meal: Bristol, £21; Hull, 20; Liverpool, £20 10s; London, £21

EGGS AND DEAD POULTRY.

Eggs are in rather slow request, and all descriptions are reduced in price. In the dead poultry markets at Bristol and Liverpool recent quotations are held for fowls and ducks, but turkeys are cheaper. At London large stocks on hand experience only a slow enquiry.

Week-end Prices—Eggs (per 120): British: 26s 6d, 25s 0d; Irish: s 3d, 22s 3d; Danish: 25s 6d, 24s 6d; Dutch: 25s 6d, 24s 3d; Argentine: 18s 0d, 17s 0d; Russian: 17s 0d, 16s 3d; Chinese: 16s 0d, s 0d; Egyptian: 10s 3d, 9s 3d; Moroccan: 15s 0d, 14s 6d; Styrian: s 9d, 18s 0d; Lithuanian: 21s 0d, 17s 9d.

Dead Poultry (per lb): Fowls—Surrey: 1s 10d, 1s 6d; Irish: 5d, 1s 2d; Others: 1s 6d, 1s 2d. Ducks: 1s 5d, 1s 2d. Geese: 3d, 1s 0d. Turkeys: 1s 7d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 2s 6d; Second, 2s 3d. Birmingham: First, 2s 8½d; Second, 2s 6d. Bridgwater: First, 2s 7d; Second, 5d. Carlisle: First, 3s 0d; Second, 2s 9d. Chelmsford: First, 8½d; Second, 2s 6d. Derby: First, 2s 7d. Dorchester: First, 3¾d. Exeter: First, 2s 6d. Hereford: First, 2s 4d. Ipswich: First, 2s 6d; Second, 2s 0d. King's Lynn: First, 2s 6d; Second, 3d. Lincoln: First, 2s 6d. Llandilo: First, 2s 3d. Mold: First, 4d; Second, 2s 3d. Montgomery: First, 2s 6d. Newport (Mon.): First, 2s 6d; Second, 2s 4d. Norwich: First, 2s 7d; Second, 2s 3d. Oswestry: First, 2s 9d; Second, 2s 7d. Penzance: First, 2s 0d; Second, 1s 11d. St. Ives (Hunts): First, 2s 4¼d; Second, 2s 2½d. Salisbury: First, 2s 3d; Second, 2s 1d. Shrewsbury: First, 2s 6d; Second, 2s 4d. Skipton: First, 2s 4d. Truro: First, 2s 0d. York: First, 3s 0d; Second, 2s 11d.

FOWLS.

Per lb.—Birmingham: First, 1s 3d; Second, 10d. Derby: First, s 0d; Second, *4s 0d. Exeter: First, 1s 5d. Hereford: First, 5d.; Second, 1s 4d. Ipswich: First, 1s 8d; Second, 1s 6d. Lincoln: First, *5s 6d; Second, *4s 0d. Llandilo: First, 1s 6d; Second, 1s 4d. Newport (Mon.): First, 1s 6d; Second, 1s 3d. Shrewsbury: First, 1s 5d; Second, 1s 3d. Skipton: First, 1s 6d; Second, 1s 3d. Truro: First, 1s 5d. York: First, *6s 0d; Second, s 0d.

DUCKS.

Per lb.—Birmingham: First, 1s 0d; Second, 10d. Derby: First, s 0d; Second, *4s 6d. Exeter: First, 1s 6d. Hereford: First, 5d. Ipswich: First, 1s 6d. Llandilo: First, 1s 6d; Second, 4d. Newport (Mon.): First, 1s 6d; Second, 1s 3d. Skipton: First, 1s 6d; Second, 1s 4d. York: First, *7s 0d; Second, *5s 6d.

*Per Head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, January 28th, 1925.

CONTENTS.

EDITORIAL 55
FIFTH MIDLAND LAYING TEST 56
THE APEX HOUSE 56
HARPER - ADAMS' AGRICULTURAL COLLEGE LAYING TRIAL 57
ANSWERS TO QUERIES 58
POST-MORTEMS 60
THE INTERNAL MECHANISM OF THE EGG-LAYING MACHINE 61
EAST ANGLIAN LAYING TEST 62
MODERN POULTRY FEEDING 63
BARROW AND DISTRICT EGG-LAYING COMPETITION 64
S.P.B.A. 64
SOME FRUIT GROWING NOTES 66
HOUSING—SOME EXPERIENCES 69
CORRESPONDENCE 70
YORKS FEDERATION LAYING TEST 70
YORKS INTERNATIONAL LAYING TEST 70
E. GRINSTEAD POULTRY ASSOCIATION 70
MARKET REPORT 71

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches. Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick. Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94. Farncombe Street, London, S.E.16. Telephone HOP 394.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue.. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

SPECIAL NOTICE.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

Classified Advertisements.

(PREPAID RATES.)

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS,	per line, extra 9d.
DAY-OLD CHICKS	,, ,, 1s.
DAY-OLD CHICKS	,, ,, 1/6

The number of letters, punctuations and spaces between words should be totalled, when the following table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

SERIAL RATES.

3 insertions	for	the	price	of 2
6	,,	,,	,,	4
9	,,	,,	,,	6
13	,,	,,	,,	8

N.B.—Advertisements, unless accompanied by correct amount, will not be inserted.

Advertisements must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and on one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d. (1s. for Box; 8d. for address) per insertion, with series reduction as shown above under "Serial Rates."

Advertisements must reach this office
FIRST POST FRIDAYS
for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY, AND TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS, for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent and six penny stamps extra to cover cost of acknowledgment of same.

EGGS.

FOR SALE.

White Leghorn Eggs; 7s. 6d. per 15, N.R. Every bird trap-nested. Also White Wyandottes and Rhode Island Reds—G. B. Tootall, M.S.P.B.A., Thorncliffe Poultry Farm, Barrow-in-Furness.

LIGHT SUSSEX AND R.I.R. EGGS.
From trap-nested parents; 12s. 6d. and 8s. 6d. doz. Catalogue.—Beard, Bleasby, Notts.

WHITE WYANDOTTES.
Trap-nested. Large eggs.
7s. 6d. DOZEN, 55s., 100.
—Brett, Hangerlea, Bishop's Stortford.

7/6 DOZEN; 60/- 100.
TRAP-NESTED LT. SUSSEX EGGS.
DOUGLAS ANN, BERWICK, SUSSEX.

Not what you hatch but what you rear

IT'S not the number of chicks you *hatch* that counts, it's the number you actually raise to profitable maturity.

If the chicks you hatch do not make proper progress; if some of them die from chills or disease, then your year's profits are at once cut down. The pullets too that come from such hatches never make prolific egg producers because of their weakened constitutions.

Feed your chicks then on Ful-O-Pep Growing Mash and save their lives and your profits.

Let your chicks store up a reserve of strength by feeding Ful-O-Pep Growing Mash. Make them immune from disease.

They will grow twice as fast as when fed on any other feeding plan and feeding errors are impossible.

Ful-O-Pep Growing Mash is given dry and straight from the bag—several days' supply at a time. Chicks are visited once a day only the Ful-O-Pep way.

FUL-O-PEP TRADE MARK
GROWING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE.

Send for the revised edition of the Ful-O-Pep Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry. This book has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent Free and postage paid.

Made and Guaranteed by
QUAKER OATS LTD., 11. Finsbury Square, E.C.2

EGGS.

FOR SALE.

Light Sussex Eggs, Lister's strain; 6s. dozen.—Morris, Gate Farm, Battle.

Prize Pen Barnevelders, White Wya dottes, White Leghorns, Fawn and Whi Runner Ducks, Black Runner Ducks. the best laying strains procurable. A fe sittings can now be booked. Correspo dence invited. — A. Hudson, The Fla Kirkby-Thore-by-Penrith, Cumberland.

Prolific Large Strain of Light Susse White Wyandotte and White Leghor reared at high elevation; 8s. for 15, fertiles not replaced.—S. Hartley, Watki son Hall Farm, Illingworth, Halifax, York

Extra Large Eggs. Cam's Wyandott (direct). "College Queen" (301), and "La Supreme's" (300), grand-daughters, mat Frank Snowden Cockerel (direct); 10l weight; son of his Extra Special Pen World's Record Missouri Winner Measures - Golden (both direct). Rho Islands, Haper-Adams, National, and Bur ley winners; mated pure Boucher Coc erel; 10s. 6d. dozen, or fifteen.—Partic lars, Hirst, M.S.P.B.A., Schoolmaster, Ga forth, Leeds.

RHODE ISLAND REDS.
Not the best, but good enough. Bouche Golden strain; 5s. dozen, post paid. Sat faction guaranteed. Hen Eggs only fro picked layers.—Adcock, Cymryd Poult Farm, Conway.

PHILIP CLAPHAM.
Specialist Breeder of Utility White Wya dottes. Over 200 Pullets trap-nested. Aga standing second, Gloucester Trials. Silv Medal last year. Hatching Eggs at mo moderate prices ready. Catalogue free receipt of your post card.—Sherriff's Far Lyonshall, Herefordshire.

ALEX. J. BELL, M.S.P.B.A., U.D.
Longwick, Princes Risborough, Buck offers from his Pedigree Pens of R Reds: White Leghorns, Indian Runne and Khaki-Campbell Ducks. Also Lig Sussex x R.I. Reds. Sittings (15 eg N.R.) from 10s. 6d. to 21s.; carriage pa Chicks double. List free. Satisfaction i sisted on.

92 PER CENT. FERTILITY
In our last batch of 70 White Wyandot Eggs. Eggs from the same pens, 7s. dozen, or 15 and no replacements. Robu stock; good winter layers.—W. Edey a Son, Upleadon, Newent, Glos.

EGGS AND CHICKS.

FOR SALE.

The Bryn Poultry Farm, Bishop's Castl Salop. White Wyandottes, Light Susse Buff Rocks, Sussex x Bresse. Eggs fro 5s. doz. Chicks, 12s. Broodies and Moth Hens from 5s.

Hatching Eggs. Light Sussex, 6s. do 22s. 6d. for 50. Barnevelders (Import Stock), 7s. 6d. doz.; 27s. 6d. for 50. Carria paid.—Leagrave Poultry Farm, Luton.

Hatching Eggs from the best pedi stock of R.I.R., White Wyandotte, Whi Leghorns, Black Leghorns; all competiti winning breeds; 40s., 100; Special, 70s., 1 Why pay more? I paid £3 3s. per doz for my eggs. You get the same strains above prices. All eggs over 2ozs. S report of laying trials.—Hodkinson, Hol well, Huntingdonshire.

BUFF ROCKS.
WHITE WYANDOTTES.
WHITE LEGHORNS.
Eggs and Chicks from hens with record (a) over 220, (b) 175-220, and (c) selected pu lets, laying eggs over 2ozs. in weight, a bred from over 200-egg hens, at 12s. 6d., 6d., 7s. 6d. per 15 eggs, and 25s., 15s., 6d. per doz. Chicks. Send for my F Mating List.—R. G. Hirst, Lane Head Pou try Farm Warley, Halifax, Yorks.

EGGS

THE OFFICIAL ORGAN OF THE

Scientific Poultry Breeders' Association

WEDNESDAY, FEBRUARY 4th, 1925.

Editorial.

THE POULTRY INDUSTRY IN 1924.

By EDWARD BROWN, F.L.S.,

General Secretary, National Poultry Council.

Those engaged in poultry husbandry, whatever s aspect may be, have suffered during the past welve months from the continuously unfavourable eather which prevailed for so many months. his condition of affairs had its influence by delayng hatching and retarding development, so far as oung stock were concerned, as well as by the eduction of egg production in many directions. t may be that when chickens and other young oultry grow more slowly, such is ultimately more dvantageous than when development is very apid, even though the immediate results are not pparently so profitable. To that extent the loss ay be compensated. In addition there has been steady advance in costs of feeding stuffs, and at e present moment no signs of reduction are in ight. Fortunately prices obtainable for eggs and hickens have not decreased, and in some cases ave advanced, taking the whole year into review. onsidering the fact that the boom time is over nd we are now under more normal conditions, ere is abundant evidence that the great majority f poultry-keepers have found the year just ended ne in which a satisfactory profit has been made. hose who complain are usually breeders who have ot found it possible to obtain equally high prices r stock, etc., as in former years, and to some xtent there may not have been quite the same emand. Such, however, was to be anticipated. y own view is that the termination of the period f inflation should be for the benefit of the industry s a whole. What must now be kept in view is ow to extend production by supplying consumers t prices which will encourage the greater use of oth eggs and poultry. That can alone be by educing the costs of such production. This is one f the problems of the immediate future.

It is satisfactory to note that every branch of the oultry industry has been characterised by a spirit f enterprise and of determination on the part of ose who are engaged in this pursuit. This is en in many ways, such as the increasing number of exhibitions and of birds displayed at these, as well as the ever-growing list of laying trials which are now being conducted in all parts of the country, and which are doing much to encourage breeders to develop the productive qualities of their birds. These two branches are more closely allied than is generally supposed. It is satisfactory to note how that on the one hand exhibitors are paying greater attention to the economic values of their stock, and that among breeders competing at laying trials and for production there is greater recognition of the fact that breed characteristics must be all the time kept in view. Thus the sections which at one time were so widely divided are now coming closer together, and extremists in both directions are finding it profitable to modify their views and methods.

There is evidence of a steady progress in production. This is indicated in the Census of Poultry taken last June by the Ministry of Agriculture, in which it is shown that in 1924 there had been an increase over 1921 of fowls in England and Wales of all ages amounting to nearly 5¾ millions, of which adult stock was greater by 3,421,000; of ducks, the increase was 212,000, explainable by the fact that more people are keeping ducks as layers, and that the number of ducklings was much smaller than previously. Of geese, the increase was very small indeed, but of turkeys there was an advance in 1924 as compared with 1921 of more than 180,000, or nearly 50 per cent. It is satisfactory to note fowls, ducks and turkeys in 1924 were greater than in 1913, although geese were less. These figures only apply, however, to holdings of an acre and upwards, and it can safely be assumed that the total increase of fowls and ducks in the country was very much greater. There are abundant signs that the opportunities presenting themselves for all classes of the community to profitably increase the supply of home eggs and poultry are being recognised, and that farmers, who have passed through a very difficult period in respect to other branches, are more and more appreciating the fact that poultry is a branch of farm live stock capable of yielding excellent profits.

As is usually the case when any industry, most of all those which are connected with animal or plant life, grows in volume, problems present themselves which have not been realised previously. One of these arises from the ever-increasing risks of loss by disease, such as are apparent on all sides, not only amongst the adult stock and young birds, but also in the process of hatching. If poultry-keeping is to be maintained successfully, attention must be given to these questions. Fortunately, as research into diseases is an important branch of the National Poultry Institute scheme, it may be anticipated that the investigations of the Ministry of Agriculture's laboratory at Addlestone will enable preventive measures to be adopted, and thus much of the loss which has arisen be avoided. The causes of loss must be dealt with at the source. Reference has been made to the influence of laying trials. During the year consideration has been given to a wider system of registration under more natural conditions, from which it may be hoped that this will result in the Ministry of Agriculture organising a scheme to be carried out similar to that which has proved so successful in Canada. The third great question which presents itself is in raising the standard of quality and size of eggs. There can be no question that with the growing volume of imports from abroad, and especially if the Merchandise Marks Bill, providing for the marking of imported eggs becomes law, much of our home produce will suffer by reason of the fact that such supplies as are received from nearer countries on the continent of Europe and elsewhere, are selected and of a high quality. And, further, as previously mentioned on several occasions, there is an ever growing need for the adoption of methods of preservation of eggs from the few weeks of glut during the spring months of the year, in order to maintain reasonable values at that time, and to supply the markets in the winter. It may be mentioned that a further disadvantage to which home producers are exposed is that they must market all their supplies, and that regulations as to exports are being adopted in various countries which will make the quality of their supplies higher than before.

During the year under review the National Poultry Institute scheme, to which reference has been made in the two previous annual reports, has gone forward. Investigations into breeding and nutrition are now being conducted at Cambridge University and into diseases at Addlestone, whilst the egg-breeding station at Reaseheath, Cheshire, and the table poultry station at Wye College, Kent, are in full operation. There has been considerable delay in commencing the Central Institute at Harper-Adams' Agricultural College, Newport, Salop, because of the difficulty in securing a fully qualified director, one combining administrative ability and knowledge of the poultry industry with scientific experience. It has been regrettable to find, owing to the fact that there has been no opportunities for training men with such qualifications in this country, that it was necessary to bring someone from across the Atlantic. Those concerned acted wisely in determining to secure the best man obtainable, wherever he might come from. It is generally recognised that this has been done in the appointment of Professor Willard C. Thompson, B.Sc., chief of the poultry division of New Jersey College of Agriculture, who took up his duties at Harper-Adams in November last Professor Thompson is at present engaged in formulating plans for the Institute, which, it is hoped, may come into active operation during 1925

The National Poultry Council has had a very strenuous year in many directions, and has abundantly justified itself. There is no need to enter into detail as to its operations, the main purpose of which has been to secure effective organisation and extension of the poultry industry. Only two questions need be mentioned, but these are of great importance—namely, first, the claims made by the Inland Revenue and various rating authorities that poultry farming shall not share in respect to income tax and rates in the concessions given to ordinary farmers. The resistance by individua poultry-keepers, supported by the National Poultry Council in these directions, has been most influential, and decisions made by special and loca commissioners, to the effect that poultry-keeping is husbandry within the meaning of the Finance Acts. At the same time it has been impossible although notices of appeal have been given by the Inland Revenue authorities in several cases, to get them to carry a case to the Higher Courts so that an authoritative decision might be obtained. This would certainly show that Somerset House realises they are not acting in conformity with the law of the land, otherwise they would have been ready to carry forward a test case. One further point may be mentioned, namely, that in some districts losses of poultry by foxes have increased, and various Hunts have been compelled to make adequate compensation. The time is approaching when there will either have to be a greater recognition of responsibility or measures be adopted for killing off these vermin, even though that involves the sacrifice of the pleasures of a few. Much has been done to improve the methods of poultry-keeping on the part of urban and cottage residents, and as a consequence a stop has almost been made to the action taken in many cases by local authorities, who, instead of dealing with individuals whose poultry are either a danger to public health or a nuisance to neighbours, have attempted to prohibit entirely poultry-keeping within their respective areas. In this direction the powers of local authorities are restricted, but at the same time it should be the object to prevent complaints by keeping fowls under suitable conditions.

The great event of the year was the holding of the Second World's Poultry Congress in Spain during the month of May. This was a great success, and there were about seventy delegates in attendance from this country. The display of fowls and the educational exhibit made by Britain were very fine indeed, and the part taken by our representatives was most influential. These international meetings and displays are doing much to ncourage business between different countries and xtension of the poultry industry.

The Trade and Navigation returns for 1924 give he most complete figures of any previous years, in hat several of the supplying countries are eparately enumerated. This is satisfactory in the xtreme, as the more information we have the etter. The decreases as shown in the following able, for which I have worked out the percentages f increases and decreases, are very noticeable in uropean countries, probably due in some cases to greater purchasing ability in Germany, indicating ecovery there and in the adjacent states from the var. France has sent us fewer eggs than at any revious time, due in large measure to prohibition f exports, and, it may be, to lesser production. ossibly to the above causes may be added the bad limatic conditions generally prevailing. The inrease in "Other Countries" is large. Here are he signs of imports from New Zealand and South merica, though the former would do little more han close the gap in Canadian supplies.

Quantities of Eggs in Shell imported into Great ritain and Northern Ireland, 1923 and 1924 :—

Country of Origin.	1923. Gt. hds.	1924. Gt. hds.	Increase or Decrease 1924 over 1923.
ithuania	477,770	300,542	dec. 37.1 p.c.
enmark	6,757,300	6,044,743	dec. 10.54 p.c.
oland (inc. Danzig)	1,284,922	730,571	dec. 43.14 p.c.
etherlands	1,435,392	1,233,482	dec. 14.06 p.c.
rance	1,337,724	60,301	dec. 95.5 p.c.
taly	415,350	422,039	inc. 1.61 p.c.
ugo-Slavia	419,844	53,816	dec. 87.19 p.c.
gypt	1,209,333	1,624,688	inc. 34.34 p.c.
hina	1,113,024	1,062,077	dec. 4.57 p.c.
.S. of America ...	240,041	135,394	dec. 43.6 p.c.
rish Free State ...	3,345,417	4,686,835	(See Note.)
anada	377,759	271,731	dec. 28.07 p.c.
ther Countries ...	1,632,068	3,691,431	inc. 126.61 p.c.
Total	20,045,943	20,317,653	inc. 1.35 p.c.

Note.—The figures given of imports from the rish Free State in 1923 are only for nine months, pril 1st to December 31st of that year. Thereore, comparisons cannot be made between the wo years. If for the first quarter of 1923 the eggs rom Southern Ireland were included in United ingdom produce then it would mean that the total mports in 1924, instead of showing a slight inrease over 1923, were less by, say, three-quarters f a million great hundreds, or about 4 per cent. t is of interest to note that the total eggs imported mount to 2,438 millions, or about 170,000 tons vith the cases.

In the following table I give the values of eggs mported in 1924, and have worked out the average eclared prices per great hundred for that and the revious years.

Total and Average Declared Values of Imported Eggs :—

Country.	Totals. 1924. £	Average Values. per gt. hd. 1923. s. d.	1924. s. d.
Lithuania	190,017	12 1½	12 7¾
Denmark	5,195,772	16 2¾	18 2¼
Poland	431,283	11 0¾	11 9½
Netherlands	1,023,972	14 11¾	16 7¼
France	36,970	11 8½	12 3
Italy	345,590	14 9¼	16 4½
Yugo-Slavia	32,978	11 8	12 0¾
Egypt	860,741	10 4½	10 7
China	681,108	11 6½	12 9¾
U.S. of America	118,518	16 6	17 6
Irish Free State	3,363,057	11 8¾	14 4¼
Canada	247,927	19 9¼	18 2¾
Other Countries	2,676,381	14 10½	14 6
Totals	15,504,314	12 9¼	15 3

The total import values in 1924 were greater by £1,687,418 than in 1923. This was not due to an increase in quantities, but to higher average declared values, equal to 2s. 5¾d. per great hundred, or 19.41 per cent., which would be equally represented in home produce.

The imports of Dried and Liquid Eggs were as under, after deducting re-exports :—

	Quantities. cwts.	Values. £	Per cwt. s. d.
1922	373,781	2,347,020	125 6
1923	482,580	2,803,670	116 7
1924	469,886	2,542,964	108 3

With respect to poultry, presumably for food, the following are the figures.

Imports of Live and Dead Poultry into Great Britain and Southern Ireland, 1924 :—

Country.		Quantities.	Values. £
Alives.—Irish Free State, No. ...		1,127,912	207,039
Other countries, No. ...		276,781	26,795
Total alive		1,404,693	£233,834
Dead.—France	cwts.	49,201	323,907
Hungary	,,	21,377	104,241
U.S. America	,,	31,933	242,616
Irish Free State ...	,,	88,852	504,494
Other countries	,,	97,402	495,391
Total dead	,,	282,765	£1,670,649
Less re-exports	,,	9,215	52,757
Nett total dead ...	,,	273,550	£1,617,892
Gross total	,,	1,678,243	£1,851,626

The average values of dead poultry imported, less re-exports, in 1923 were 128s. 3d. per cwt., and in 1924 118s. 3d. per cwt.

The net import values of Eggs in 1924 was :—

Eggs in shell	£15,504,314
Eggs not in shell, less re-exports	2,542,964
Poultry, less re-exports	1,851,626
	£19,898,904

which is an increase of £1,279,692 over the previous year, the result of advance in average values of eggs, not to greater quantities.

In view of the poultry census for 1924, recently published, I omit any estimate as to home production; that may be left to a later date, from the fact that the present is my thirtieth annual summary of the poultry industry, and therefore will present a favourable occasion to review the last three decades.

MIRFIELD AND DISTRICT POULTRY-KEEPERS' ASSOCIATION.

Third Monthly Report.

The third monthly period closed on the 18th of January. The health of the flock is very good. There is an appreciable increase in egg production.

The following are the positions to date:—

White Leghorns. Pen Section (Three Birds).—Mr. W. Horsley, 72 pts.; Mrs. H. Poole, 72; Miss Mitchell, 66.

Any Other Variety. Light Pen (Two Birds).—Davey and Sons. 49; Mr. H. Poole, 13.

White Wyandottes. Pen Section (Three Birds).—Ledgard and Brown, 73; Mr. R. Scott, 63; Mr. E. G. V. Ermen, 63.

Any Other Variety. Heavy Pen (Three Birds).—Mr. W. Horsley, 169; Mr. T. E. Burnett, 116; Mr. P. Furness, 106.

Single Bird. White Leghorn.—Mr. W. Horsley, 40; Mr. A. Blackburn, 41; Ledgard and Brown, 26

Any Other Variety. Single Birds, Light.—Sykes Bros., 29; Mr. F. Elmour, 15.

White Wyandottes. Single Bird.—Mr. W. Horsley, 49; Mr. H. Crowther, 42; Mr. C. Whiteley, 39.

Any Other Variety. Heavy, Single Bird.—Mr. A. Sykes, 26; Mr. W. Saxton, 26; Mr. J. W. Brown, 24.

THE LANCASHIRE UTILITY POULTRY SOCIETY.

INTERNATIONAL EGG-LAYING TEST, 1924-5.

Third Month Report.

The report for the third month (December 13th—January 10th) may be regarded as very satisfactory, considering the conditions under which it has been carried out.

The weather has been very unfavourable for egg production; cold, high winds and rain being very prevalent, which has had the effect of causing the birds to lay rather inconsistently, and a few after being in full lay have stopped altogether and gone in moult.

The production of eggs for the month is over 50 per cent.

The health of the birds is very good; a few have been treated for colds.

Below is a list of the leading pens and individual birds. Figures are Eggs and Points to date:—

SUMMARY OF LEADING PENS.

Large Breeders. Section 1.—W. Crabtree, Twiston, 523, 518; F. Snowden. Cowling, 487, 508; R. Marshall, Forton, 500, 473.

Large Breeders. Section 2.—F. Harvey, Bretherton, 506, 494; J. R. Hull, Thornton-le-Fylde, 425, 462; Mrs. M. Molloy, Crumlin, 404, 411.

Large Breeders. Section 3.—F. R. Welch. Bewdley, 394, 406; W. Hamnett, Blackpool, 410, 405; Miss H. Bell, Welwyn, 310, 320.

Large Breeders. Section 4.—R. Rodwell, Nelson, 472, 473; R. H. Aspden, Balladen, 476, 459; F. Snowden, Cowling, 435, 442.

Large Breeders. Section 5.—S. Street-Porter, Ely, 447, 465; R. Rodwell, Nelson, 487, 459; F. Snowden, Cowling, 397, 419.

Small Breeders. Section 6.—J. W. Lodge, Holmfirth, 291, 284; Dr. J. E. Helm, Newchurch-in-R., 251, 259; J. Freeman, Greenfield, 260, 251.

Small Breeders. Section 7.—C. C. Humber, Hoole, 281, 266; W. H. Fletcher, Woodplumpton, 230, 252; Miss G. M. Barker, Scorton, 246, 244.

Small Breeders. Section 8.—T. Rossall-Sandford, Shrewsbury, 282, 287; W. J. King, Leamington Spa, 121, 116; Col S. Sandbach, Abergele, 124, 122.

Small Breeders. Section 9.—F. F. Fisher, Tarleton, 289, 289; W. Machin, Huntington, 266, 261; G. W. Sutcliffe, Hebden Bridge. 270, 249.

Small Breeders. Section 10.—W. A. Lansley. Whitchurch, 263, 286; J. Stuart, Garstang, 225, 222; O. Rawlinson, Waverton, 216. 207.

Small Breeders. Section 11.—Guy Mart, New Longton, 251, 237; Eliz. Priestley, Oxford, 204, 197; Capt. J. T. M. Mee, Gressenhall, 185, 188.

Single Bird. Section 12. Heavy.—J. R. Hull, Thornton-le-Fylde, 61, 67; E. N. Paterson, Tarporley, 62, 64; J. Rainford, Penwortham, 56, 61.

Single Bird. Section 13. Light.—Pedigree P.F., Stratford-on-Avon, 61, 59; S. J. Parsons, Musbury, 56, 57; F. Snowden, Cowling, 51, 56.

Novice Breeders. Section 14. Heavy.—Miss Walker, Hothersall, 237, 240; W. Ellwood. Galgate, 178, 194; R. Hargreaves, Barton, 186, 175.

Novice Breeders. Section 15. Light.—Wright and Purves, Longton, 249, 247; W. Ellwood, Galgate, 245, 231; S. Marquis, Greenhalgh, 228. 228.

Modern Poultry Feeding.

By **TOM NEWMAN.**

This week I have had four enquiries as to certain ingredients in the ration having a detrimental effect upon egg production. The first is a sample of fish meal. The writer say that, instead of a continuous increase in the number of eggs from his flock which he might reasonably expect, there has been a sharp decrease of over 100 per day. He sends me a sample of fish meal, which he has bought recently, and asks if I think that may be the possible cause. On examination I find an evil-smelling sample, the packet in which it is wrapped is very greasy, and the oil has found its way through to the envelope. There is obviously an excess of oil, and if my correspondent persists in using it, he will have far more serious trouble than a drop in the egg yield. The result of feeding such a sample would not be noticeable perhaps for a few days, but it would soon give trouble. An excess of oil is always indicated if, when fish meal is placed in a sheet of paper, the latter becomes greasy.

The second letter related to a sample of maize germ meal. This only affected a small flock of birds, but caused diarrhoea. Egg production declined rapidly and a few of the pullets went into moult. I do not think there is any doubt that the germ meal was the cause of the trouble, and it was due to the fact that it has been badly stored. When such is the case it has a nasty sour smell, and should on no account be fed. Sometimes this is caused by it being packed in a moist condition.

The third related to a proprietary meal. Here the symptoms were somewhat similar to the above, and the meal can only be described as "cheap and nasty." Small lumps of palm-nut kernel cake were found therein with other sweepings; the cake had soured as it will do when badly stored. It is a pity that the sale of such rubbishy mixture as this cannot be stopped.

The fourth was due to the feeding of an excessive amount of fibre, resulting in digestive trouble, for which a very coarse sample of so-called clover meal was responsible in the main, fed in conjunction with inferior fats and a sample of what was described as Sussex Ground Oats. This was one of the worst cases of feeding really bad foodstuffs I have ever come across and I must say that had the writer used a little commonsense, he would not have had the trouble.

"H. H." writes to ask what I think of the following mash, on which he says his birds are kept in tip-top condition, and are laying heavily, thirty Leghorn pullets for 12 weeks laying 50 eggs per bird:—

6lbs. Thirds.
4lbs. Indian Meal.
6lbs. Sussex Ground Oats.
6lbs. Pea Meal.
8lbs. Meat Meal.
4ozs. Dried Yeast.

To every bucket of above one bucket of bran is well blended.

One can only say that this is a very highly forcing nash, and unnecessarily expensive; if persisted in uring the next few weeks it is likely to cause serious varian trouble, and probably there will be several ases of prolapses. The percentage of yeast is so small hat it could not possibly affect the mash at all. qually good results would have been obtained on half he quantity of meat meal, more especially in view of he high percentage of pea meal used. The " topping " condition would be probably due to the excesive activity of the ovary due to the very stimulating nash; one could get the same results on a much heaper formula.

In reply to " R. F. C.," Beccles, who asks whether consider my dry chick feed formula better than that dvertised by a certain firm at a price which would be t least 75 per cent. above what the average poultryeeper could mix mine for, I may tell him that the aixture to which he refers is mine, and was adopted y the firm in question after my reading a paper at Iarper-Adams' Conference, and much of what I said here was quoted in their subsequent advertisements vithout acknowledgment. In reply to this further etter for a " follow-on " mixture after four weeks ld, equal parts cracked wheat and whole groats, with alf part cracked maize will be a good mixture.

GREEN FOOD.—I have been asked many times uring the last few weeks what is the best green food or small flocks, and a method of cleaning runs by rowing same. Mustard, rape and cress, are all good one wants a quick growing crop which will cleanse a in, and be useful for green food, but nothing, to ly mind, is better for young growing chicks than pinach. It is very rich in iron and they will consume rge quantities of it. I was asked this question on vo or three occasions last week in Lancashire. It is difficult to over-estimate the value of green food. here is no doubt that it is one of the greatest means fighting disease, whether in our laying or growing ock, and that it does much to ensure good hatchable gs and vigorous chicks we have ample proof.

21, Meadow Street, Atherstone.
14th January, 1925.

Dear Sir,—I enclose cheque value 12s. 8d. for one year's bscription to " Eggs." I don't know what I should do without It is well worth the extra postage to get it regularly on the me day of the week, without having to go to the newsagent for From what I have seen of the other poultry papers they are t to be compared with " Eggs." They contain too much of same thing, hashed up over and over again; very rarely anyng that is new—generally six months or more behind "Eggs."

Yours faithfully,

(Signed) F. E. HIORNS.

" Ashmead," Garstang, near Preston.

Dear Sir,—I would like to add my appreciation of your orts in making " Eggs " so useful and interesting to poultrypers. I look forward each week to receiving my copy, and always sure to find something new and helpful to me. I ve long ago ceased to take other poultry papers, as I find t the help one gets from " Eggs " is far more reliable. I h you, " Eggs " and the S.P.B.A., a very prosperous New ar.

Yours sincerely,

(Signed) W. R .LORD.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

" BODIES " for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (**NOT from Major Saunders**).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

" In Doubt " (Hoyland) sends sample of what is called " Sussex ground oats." Although this is an excellent sample, it is not 'Sussex' ground, but would answer the same purpose. The clover meal is very good indeed, containing a good percentage of leaf, and the meat meal is also a good sample. He also sends a formula, and wishes to know whether it is suitable for breeding stock. This includes some condiment, which I would advise him to omit, otherwise the mash will be quite a good one for breeders.

H. D. (Ashstead) sends sample of dry mash for my opinion. The ingredients appear to be of fairly good quality, except the bran, which certainly could be improved upon. Her pullets, which put up 108 eggs in November, and 148 in December, dropped to 42 during the two weeks of January; two of these stopped laying during the middle of December. Complaints of a drop in the egg yield were very universal throughout the country in the early part of January. One can only attribute it to the very rough weather which we experienced. The birds in many cases became highly nervous, and this prevented their assimilating their food properly. I can only suggest to "H.D." that she feeds rather more heavily of grain at night. She quotes a pen of six White Leghorn hens which started laying again the second week in January, and have stopped altogether now. All the birds are in good condition, and kept in modern houses. The feeding is quite correct. I can only advise her to keep the birds perfectly quiet, and see they are in good condition, and feed them well. They will probably come into lay again in the course of a few days.

A. W. (Stanway Green) sends four samples—middlings at 11s. 6d., which are fairly good quality, containing rather more bran than I like to see; a good sample of fish meal at 24s. cwt. I would suggest that he gets a guarantee that the salt content is not above 4 per cent. Maize meal at 13s. 6d. is only just fair, and the bran at 10s. is too poor to use.

B. W. (Braunton) sends two samples of fish meal. That marked "B" is quite satisfactory; "A" contains an excess of oil, and is likely to cause trouble if used. He asks if limestone grit is sufficient for fowls and ducks, and to this we answer in the affirmative. I must refer him to previous copies of "Eggs" for a chick formula and grain feed.

A. G. (Reeking) has six pullets and cock, and is getting one egg per day and sometimes two. I have no particulars as to the nature of the pullets, when they were hatched, or anything else. His feed consists of two handfuls of grain in the litter, dry mash hopper is open all day and night. Before going to perch lets them have as much grain as they will eat. They also have a plentiful supply of swedes, mangolds, and cabbage, and flint and oyster shell. The formula is:—2lbs. bran, 4lbs. middlings, 2lbs. maize meal, 1lb. soya bean meal, and 1lb. meat and bone meal. "A. G." asks if the birds will lay better with a cock with them than without. I am afraid I cannot help him much, but would suggest that he reduces the soya bean meal and meat and bone meal to one half each. He must try and find out the bodily condition of the birds, and see whether they are in a condition to lay or not; handle them, and see whether they are overfat, as it may be possible to discover this by feeling the abdomen, which, if full and hard, is a certain indication of the birds being in an overfat condition. We cannot, in these columns, tell him the best strain to get for egg production, or who is the best breeder. If he is keeping the birds intensively the White Leghorn would be the best for his purpose.

"Hillside" (Nelson) wants a wet mash for layers to suit his place. His farm is well up on the hillside, and he gets his share of rain, fog and very cold, biting winds. He has the following meals:—Bran, fine offals, ground oats, fish meal, maize meal and ground linseed meal. The following will be a good mash:—4lbs. middlings, 1½lbs. maize meal, ½lb. Sussex ground oats, 1lb. fish meal, the whole dried off to a crumbly moist consistency with 1lb. of bran. Ground linseed appears to be too expensive a proposition to use in a wet mash. It would be useful during the moult. He has also two pens of White 'Dotte hens, two years old, and he wants to breed from them this season. He is not getting an egg a day from the 22 birds, and he has bought two high-priced cockerels to go with them. He wants to know if I can give him a mash to make them lay. I suggest, "Hillside," that the best plan would be to get someone in to handle these birds for you, or to handle them yourself. The mash I have just given you will answer for these, as breeders, if you replace one-half of the maize meal with another half part Sussex ground oats. Whether they are in under condition
or over condition, I cannot say, and it will be bet
for you to judge for yourself, and modify the feed
accordingly.

"Momegu" (Cornwall) is informed that repl
by post cannot be made to non-members of
S.P.B.A. Surely if a matter is really urgent, it
worth the 5s. subscription, which entitles him
so many other privileges besides? Briefly
question is this. He proposes to commence po
try farming in September, with 500 pullets, 2
White Leghorns and 250 White Wyandottes.
seems to him more profitable thus than to ha
bought eggs in March and risk the chance of
chicks not being perfect, whereas he could p
and choose from the full-grown pullets, and
sure of good birds. He is now with a breeder a
egg farmer, learning what he can, and he wa
my advice on the above scheme. He states th
the prices for the individual pullets offered is 2
per bird, and what do I consider would be a f
price to pay for the full 500. I think this is a v
mistaken way of looking at it. It is not what
is **fair** to pay, but what he can afford to pay. P
sumably, he is commercial egg farming. Now
him estimate the fair nett profit (I am giving t
approximately) at 6s. per bird on an average p
duction of 150 eggs. How can he afford to p
anything like a guinea for pullets and expect
show a profit? It is the last way in which I sho
start commercial egg farming. As he does
care to run the risk of eggs or, presumably, buyi
day-old chicks, a far better plan for him wo
be to buy a few good breeding pens and breed
own stock in 1926. In reference to the span ty
of house to which he refers, entirely built
asbestos cement sheets. I am not sure that th
cement sheets are very suitable for this type
house, otherwise the suggestions he makes se
quite feasible.

"One-in-doubt" (Newton Abbott) is feed
with a proprietary mash, so I cannot advise him
this matter. I should not think there was
object in adding salt to the mash. He goes on
ask how often glauber salts should be given.
states that he has heard some people say once
week. I have so repeatedly pointed out the f
of giving glauber salts or any other salts to heal
stock. It is an absurd idea which dies very ha
Keep your medicines until your birds need the
I cannot say as to whether the stock he has bou
is good or not. He certainly should have ha
pedigree for the two-year-old hens that he p
£2 10s. each for, and the cockerel at £5. I ag
this is a lot, but then, like most beginners,
asks for advice when the damage has been do
Will he in future please address communicati
requiring answers in "Eggs" direct to this of
and not to the publishers?

W. R. (Stratton) writes that she is going to keep 300 birds on a bare acre, and beyond the grass in the runs she cannot provide them with fresh green food. She asks if the following mash will do :—1 lb. bran, 1 alfalfa meal, 2 maize meal, 4 middlings, and 1 fish meal, and, as this is for eggs only, is S.G.O. or dried yeast necessary? I should endeavour at least during the winter months to supplement the green food by giving swedes, or turnips, and whatever green food is available. In other respects her mash will answer. S.G.O. and dried yeast are not necessary for egg production, and with regard to the condiment she proposes to add to the mash, I advise her not to use it. It is too expensive and unnecessary. It would be advisable for her to have the grass on the field scythed. With regard to her question as to what should be the outside temperature before the heat is stopped under the hover. She must use her own discretion there, but in any case the heat should not be stopped before the chicks are six weeks old. She will be far more easily guided by the actual state of the weather than by my giving her a definite temperature. In answer to another question as to if bran is used in the brooder, under the hover, how often with 300 chicks should it be changed? That is again a question in which she must be guided by observaion. She should shake it over and keep it perectly dry. It would not be advisable to put more bran in the mash during the summer months. I am glad to know that she finds "Eggs" the most stimulating and enthusiastic paper, and she is getting tremendously keen.

W. A. F. (Clayton Heights) says that he has ead with interest in "Eggs" that breeders are using bran for chicks in their brooders. He wants o know if this means that immediately they are hatched they are put in a brooder containing bran as litter, and do I recommend this. His point is hat as nothing is given to the chicks for 48 hours, and nothing required, the chicks having bran to peck at might suffer from this. Yes, it is meant hat the chicks are put on bran directly they are emoved from the incubators. I do not think that or the first 48 hours any injury is likely to arise rom their pecking at the bran. I have tried it on wo or three occasions with good results, but have not made a practice of using it. I cannot claim hat I have found putting the chicks on bran better han on a bedding of chopped straw.

POST-MORTEMS.

C. W. V. The post-mortem examination of the hree weeks old chicken showed the cause to be neumonia, and from the condition of the lungs and olour of the blood, I am of opinion that this is due o bad air in the hover. The symptoms you describe early point to intoxication by carbon-dioxide and other combustion products, and the remedy, of course, is to attend to the ventilation of the apparatus. The temperature is correct, but evidently the ventilating system is wrong.

R. In reply to your letter in reference to the dead chick, it was quite impossible to make a diagnosis from the mangled pulp which arrived. Would you kindly send me an untouched bird, or, better still, several, and I will try and give you the cause. Portions of birds are useless, and are liable to lead one to an erroneous conclusion.

To the Editor, for the information of the Members.—Parts and mangled remains of amateur attempts at post-mortems should not be sent, as being both misleading and a waste of time.

R. R. D. A cystic tumour, the size of a cocoa-nut was attached to the uterus, and by its weight had torn a rent in it, thus allowing the contents to escape and cause peritonitis.

E. H. S. The four chicks were all the subjects of bacilliary white diarrhoea, and I am afraid that the majority of the remainder will also succumb. There is no effective treatment, but chicks that survive the eighth day acquire a natural immunity to the disease. To prevent a recurrence in future hatchings, all equipment, including the incubators, should be very thoroughly disinfected. Chicks seen to be ailing should be destroyed immediately, and the bodies burned, as this will remove centres of infection. The enclosed reprint from "Eggs" by my friend and colleague, Capt. Leeney, will, I hope, be of service to you, as it gives a very complete and authoritive description of the disease.

G. H. H. S. Pneumo-mycosis, or pneumonia due to the fungus aspergillus was the cause in each case. This is not an hereditary disease, but due to the equipment and ground becoming infected with the fungus, and, of course, infection also takes place from bird to bird. Treatment is not very successful, but by toning up the unaffected ones, they are placed in a better position to resist the disease. Dissolve forty grains of the citrate of iron in every gallon of drinking water. and continue for a week or two. Clean up and disinfect all equipment, brooders, incubators, etc., and move to fresh ground, if practical. Dead birds and all droppings and rubbish should be burned, and the contaminated runs raked over and limed before further use.

N. G. T. The post-mortem examination of the hen showed an intense inflammation of the crop, proventriculus and gizzard, which indicates poisoning by some irritant. In the absence of a chemical analysis it is not possible to say definitely what this poison was, but arsenic, either in the form of sheep-dip, weed-killer, or rat paste, suggests itself as one of the most likely.

The Internal Mechanism
of the Egg-Laying Machine.

By **J. L. ROSEDALE.**

Continued.

Our attention has been called so much to the mineral question during the past year or so, that there is great aptitude to overdo its importance unless the requirements are considered from the quantitative side. The materials which usually come under this head include sodium, potassium, calcium, magnesium, phosphorus, sulphur, iron, and iodine. A certain proportion of these are found in the bird's composition, so that we shall have to see that they are all present in that portion of the food which is used for constructive purposes.

Excess of these amounts is valueless, as it would either be excreted in the faeces, or else, if temporarily absorbed, on account of solubility would be neutralised, and excreted in the urine. Salts are not necessary from the energy aspect, and even the older workers have not yet reduced them to "Starch Equivalents"!

Our object, then, is to supply a proper balance of all the minerals concerned. Recommendation of "Large quantities" of any particular mineral, such as lime or iron, is beside the point, and is due to the failure of those interested in the subject to produce a full mineral analysis of the common British poultry foods—a neglect so glaring as to be unworthy of criticism.

The only available tables are those of Forbes in America.

The figure for "ash" in the analysis of the bird given above is 0.8 per cent. Forbes expresses the proportions of the different minerals in parts per thousand of DRY substance as follows:—

Potassium, 14.72 per cent.; Sodium, 3 per cent.; Calcium, 0.35 per cent.; Magnesium, 1.17 per cent.; Phosphorus, 8.01 per cent.; Sulphur, 3.7 per cent.; Chlorine, 1.9 per cent.

When we remember that the bird contains 63 per cent. of water we see that it is almost impossible to fail to supply enough salts. We have to bear in mind, however, that bones constitute about 10 per cent of the animal, and that must be taken into consideration.

A 50 per cent. allowance of this (10 per cent.) will suffice for the calcium portion. As stated above, only half the food in the early stages will go for constructive purpose, so that not more than 2½-3 per cent. of calcium will ever be needed in the diet, and this amount will decrease as the bird gets older. Taking 4 ounces of food as our daily quantity this comes to about 3 grammes of lime per day in the most necessary stages—an unmeasurable amount in ounces! We shall see later that there is no difficulty in supplying plenty of minerals without going to the expense of buying salt mixtures to corrode our mash hoppers.

Fat need cause no special concern. The function of the vitamin fats is discussed below, and while fat is found in the bird it does not mean that a great deal of fat need be supplied in the food. Fat is formed in the body from carbohydrate, and Osborne and Mendel have demonstrated that fat other than fat containing enough fat soluble vitamin, is not essential in the diet. In practice, it is impossible to feed a fat-free diet, although poultry foods generally contain very little. Nevertheless poultry-keepers have come across over-fat pullets occasionally! The reason is instructive when we want to consider fattening. It is no doubt due to an unbalanced grain ration, which contains mainly carbohydrate.

Vitamin A or the fat soluble vitamin appears to be closely connected with mineral metabolism, especially bone formation. McCollum's work shows that in the absence of the fat soluble factor calcium and phosphorus are not properly combined together to form calcium phosphate, and that the bones suffer accordingly. It is clear also that if these minerals are not present in proper proportion they cannot be formed into calcium phosphate, whichever is in excess will have to be got rid of—wasted—by the body. The egg contains this vitamin, so that it must be supplied to the laying hen. Very little is known from a quantitative standpoint at present, as most observations have been confined to cod liver oil. There is no reason to suppose that the supply could not be obtained more cheaply from ordinary farm foods, though the fact that poultry foods usually have a low fat content must not be lost sight of. There is evidence from certain quarters that yellow maize may be useful in this respect. Green food, such as cabbage, is recorded as being as potent as egg yolk in the report of the Medical Research Committee (1919).

B vitamin or the water soluble vitamin has already been mentioned with regard to its effect on digestion. The papers by Professor Plimmer and myself have always indicated that a balance between B vitamin and the rest of the diet must be adhered to. B vitamin keeps the organism "up to the mark," and the "mark" may be pictured as a line dividing perfect health and the lack of it. The function of the water soluble vitamin is much more than a safeguard against any visible disease, and our observations show that the utilisation of food is more economical in the presence of a plentiful supply of B vitamin. It will probably be found that the greatest use the stock breeder can make of nutrition research is to realise the importance of balancing his foods with regard to this vitamin. (A fuller account was given by the writer in the Nat. Poultry Jour., Feb. 8th, 1924.)

Unfortunately, we have as yet no tables giving the vitamin content of the different foods. We must therefore for the present distinguish broadly between the "active" tissue of plants, such as e germ, leaves, etc., and the "Storage" tissue, ch as the starchy endosperm, and bear in mind at the vitamins are for the most part found in e "Active tissue."

Our requirements then are roughly 10 per cent. protein of a good quality, an ash content of out 2½-3 per cent., mostly lime, a good vitamin pply, which is obtained by deriving our food from what we have called "Active tissue," and the rest of the food is required for energy purposes, and will most cheaply be supplied in the form of carbohydrate BALANCED with regard to B vitamin.

We have as yet not considered the special requirements with regard either to egg laying or to fattening, and these subjects will have to be considered in the next article.

National Poultry Council at Cardiff.

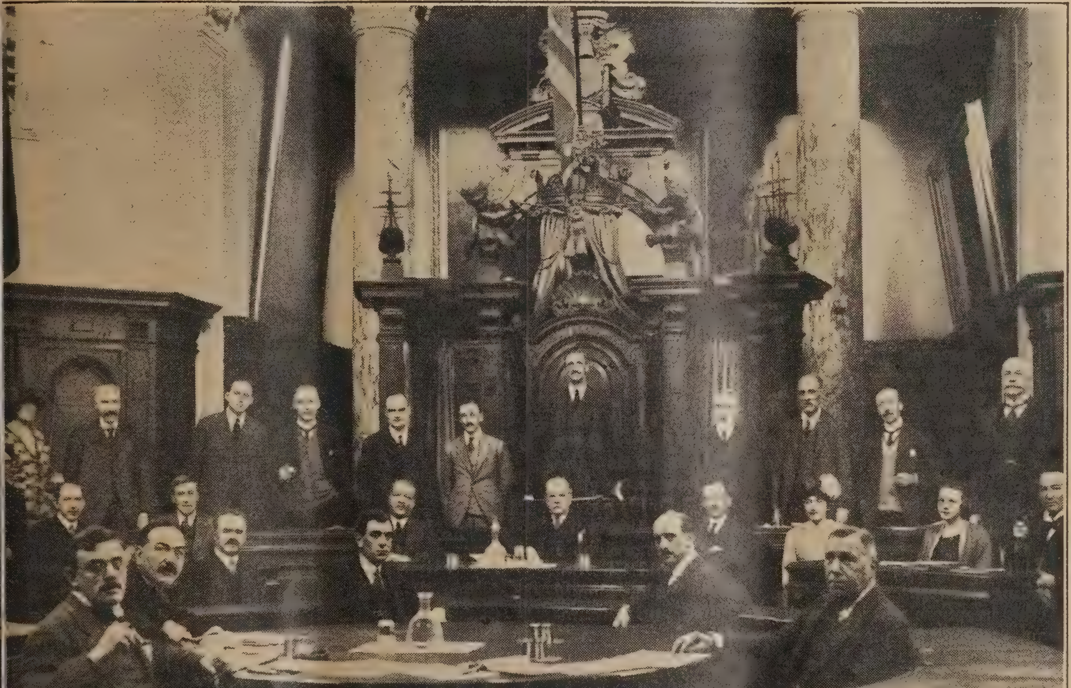


Photo: "Western Mail," Cardiff.

Back Row (Standing)—Left to Right: Mr. LESTER SPURGEON, Mrs. HUNTER (President S.P.B.A.), Mr. T. R. ROBINSON, Professor WILLARD THOMPSON, Mr. P.A. FRANCIS, Mr. CLEM WATSON (Vice President N.P.C.), Mr. LESLIE WILLIAMS (Chairman N.U.P.S.), Mr. TOM NEWMAN (President N.P.C.), Mr. EDWARD BROWN, F.L.S., Mr. A. H. BROWNSON, Mr. STREET-PORTER, Col. SANDBACH.

Second Row (Sitting): Mr. BOSTOCK SMITH, Mr. HEDWORTH-FOULKES, Col. HARDY, Mr. C. N. GOODE (President Poultry Club), Mr. W. HAMNETT, Mrs. CLARKE, Miss FENNELL, Mr. WALTERS.

Centre Row (Left to Right): Mr. E. J. DAVEY, Mr. J. CHAPPELL, Dr. CROWTHER, Mr. MOORE, Mr. J. H. DOWDEN, Mr. W. M. ELKINGTON.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

BODY SIZE.

A Lancashire correspondent accuses me of making two utterly irreconcilable statements. He writes:—" In your lecture at Preston you said that high fecundity and early maturity are correlated, and you quoted Hurst to confirm this; then you went on to impress on your audience the importance of body size, and, in answer to a question, said that early sexual maturity was against size—that the fancier could only obtain it by selecting birds which matured late. This is very contradictory, and I think you should have remembered you were talking to an audience largely composed of breeders and egg producers."

I never lost sight of the latter fact. It is impossible to agree with my correspondent's assertion that what was said is contradictory. If he reads the lecture again he will see that distinction is made between *precocity* (which, if encouraged, results in the small bird and the *small egg*, with the lowered vitality, lowered hatchability, and the unrearable chick), and the *early maturity*, which is an economic factor if not pushed to an extreme.

If we grade them as precocity, early maturity, and late maturity, we shall find that only in one of them have we the really economical bird. It is the extremes we have to avoid, and if we do so, we shall hear considerably less about poor hatchability, rearability, and disease generally. During question time I was asked, I think by Dr. Helm, what weight I considered a utility Leghorn hen should be for breeding purposes. My answer was 4lbs.; that should be the irreducible minimum, and under no circumstances would I place a hen in the breeding pen lighter than this. If she didn't attain this weight at the end of her laying year, it is better to leave her out of the breeding pen. It is utter nonsense to say that size is against production; it is far more correct to say that production is against size. We have plenty of examples of Wyandottes, over 7lbs. in weight, passing the 200 mark. Our laying tests would render inestimable service to the industry if they insisted on a minimum weight for every bird entered, and only this week I saw the records of two Leghorns which, at the end of their laying year, had records of 256 and 261, and each weighed at that time 4lbs. 8ozs.

THE BENTLEY TEST AND LINE-BREEDING.

A correspondent asked in what way I think the first cross test at Bentley will help us on the question as to whether line-breeding is necessary or advantageous when high fecundity is concerned? In
answer to this: line-breeding has been thought nec
sary to avoid variation. If it can be demonstrat
that breeding for a specific factor, such as high e
production, we can breed individuals which a
" pure " for the characters which make high e
records possible, then I think it possible that t
mating of two such individuals, even of differe
varieties, would not show any greater variation
the production of the progeny than would the mati
of two closely related individuals who were equal
" pure." It will be understood, I am only referri
to egg production. For example, if the mating we
a 240-egg male to a 240-egg dam, in the case of t
cross and the pure, I should expect egg production
approximate to that of the progeny of the two pu
breds with similar records. It is again not a que
tion of the genetical characters being " fixed "; it
simply that they are the dominant characters in t
individuals, and we can understand now why li
tends to beget like—it is because it prevents t
introduction of dissimilar characters. One's views
this question of crossing undergo modification
knowledge increases. Perhaps I should have sa
" my " views; please be it understood that I a
referring to variation now, and not to any views
have expressed as to the relative merits of the cro
bred and the pure. I still maintain that we can on
make true progress by improving our pure-br
stock, recognising our mistakes, and taking adva
tage of them. Cross-breeding, to my mind, is
retrograde step. If these views are correct then t
vitality of our pure-bred stock should be much i
proved, for the fear of crossing strains has u
doubtedly led to a great deal of close breeding whi
has not always been done with due discrimination.

THE REGISTER.

The Register has won golden opinions. It
universally agreed that it is the best issued sin
the S.P.B.A. came into being. The Editor has eve
reason to be pleased with his work, and it is r
hard work; only those who have had a hand in
know what it means. There has been an ext
ordinary amount of interest evinced in the artic
on the "Intensive System," by Mrs. Hunter a
Capt. Arthur Knight. This is the tenth issue, a
Mr. Mudie Draper has edited every one. I think
scored because he adopted the original idea that
Year Book should be something besides a mere reco
of names and addresses, a few weights and measur
and a list of societies. But then the S.P.B.
always initiates. I think our motto might well
"Initiation, not Imitation."

One little mistake has occurred which is in ne
of correction. On page 17 is published a phot
graph of a tested cock, the property of Mi
Ransford. It is stated that his three daughte
averaged 243 eggs each. This is obviously
printers' error. It should read his **31** daughte
averaged 243 eggs each. Certainly the Edito
apologies are due to Miss Ransford, and I tend
them to her on his behalf.

The Nutritive Requirements of Poultry.

By **J. B. ORR, D.S.O., M.A., M.D.**

THE EFFECT OF ADDING VITAMIN RICH SUBSTANCES TO NORMAL RATIONS.

I.—VITAMIN B., OR THE WATER SOLUBLE VITAMIN OF YEAST.

B. Orr and M. Moir, Rowett Institute; H. Newbiggin, East of Scotland College of Agriculture; and G. Scott Robertson and M. Murphy, Ministry of Agriculture and Queen's University, Belfast.

If poultry be fed exclusively on refined cereal pro-
cts, such as whole rice, as has been done fre-
ently under experimental conditions, the birds soon
velop symptoms of malnutrition. Some of the
st striking of these symptoms can be made to dis-
pear by the feeding of the germ and outer layers
the grain removed in the process of milling and
ining. The constituent or property present in the
m and outer layers which has this beneficial effect
s not been identified. It is generally referred to
"Vitamin B" or "B" Factor.

Vitamin B. is very widely distributed. It is pre-
nt in practically all foodstuffs in their natural con-
ion. Whole cereal grains or the milling offal con-
ning the germ and outer layers of the grain, milk,
gs and yeast, are all especially rich in this dietary
tor. In experimental work, yeast or an extract
m it has been very largely used as a source of this
amin.

The fact that yeast has been shown to have a bene-
ial effect on health and rate of growth, when added
artificial diets fed to poultry in experimental tests,
s lead to the assumption that under ordinary prac-
al conditions the addition of yeast to the ration
ght lead to improvement in growth, egg production
d health. Hence yeast, and also certain substances
nsisting of, or containing extracts of yeast have
en put on the market, some of them under pro-
ietary names, and their use advocated as a source
vitamin B.

There seems little doubt that the addition of yeast
certain ill-balanced rations improves the ration.
has not been shown, however, that the improvement
due entirely or even chiefly to vitamin B., or any
ner unknown dietary factor. Yeast is rich in both
otein and mineral nutrients. Dried Yeast contains
er 48 per cent. of protein and 10 per cent. of
neral matter. "Marmite," a commonly-used food
rived from yeast, containing, according to the
alyses of Plimmer (1) 28 per cent. of mineral
tter. Both protein and mineral matter are, of
urse, essential food constituents, and the nutritive
lue of a ration depends very largely upon the amount and nature of these which it contains. If yeast be added to a ration deficient in either protein or certain essential mineral nutrients, and the protein or mineral of the added yeast makes good these deficiencies, there would certainly be a beneficial result. The same beneficial result, however, would not be obtained if the original ration were properly balanced with regard to the protein and mineral matter. Obviously one is not warranted in assuming that the whole of yeast is dependent upon its content of Vitamin B., and in advocating its use merely as a source of this unidentified dietary factor. Indeed, there is no evidence to show that any ordinary ration fed to poultry is deficient to Vitamin B.

Two points of practical importance have not yet been settled. First: Is the addition of yeast to a well-balanced ration such as an intelligent poultryman would use under practical conditions, followed by a definite increase in growth or egg production? and, Second: If there is any improvement, to what extent is this due to the proteins and minerals present? The answer to the second question is of importance, because it might be possible to supply these known constituents from a cheaper source than yeast, or some of its extracts, which have been put on the market as poultry foods.

During the past two or three years a number of investigations have been carried out to obtain definite experimental evidence on these points. Though these investigations are likely to continue for some time before definite final conclusions can be drawn, some of the results already obtained appear to be of interest. The present communication is intended to give an indication of the results of experiments devised to show the influence on egg production of the addition of yeast to ordinary rations for poultry kept under practical conditions.

EXPERIMENTAL DATA.—In all experiments the birds used in the corresponding groups were of the same age and the same strain, and were kept under the same conditions with regard both to housing and extent and nature of run. In every case the birds had a run of limited range.

Experiment I. (East of Scotland College of Agriculture).—A ration which contained yeast and was being used in practice, was fed to one pen of 10 Ancona pullets. A control pen of 10 comparable pullets was given the same ration with the yeast kept out.

The ration consisted of:—

Mash:—	Proportions.
Wheat Offal	60.
S.G. Oats	15.
Cooked Maize	15.
Meat Meal	5
Bone Meal	2
Dried Yeast	3

The mash was fed *ad lib.* In addition, 2ozs. of grain per bird per day were given, and cabbage, oyster shell and grit *ad lib.* The run was on bare earth. —

Table I. gives the result of a test of a full year's duration.

TABLE I.

Average Number of Eggs per Pullet.

	Yeast.		No Yeast.	
	No.	Av. Wt.	No.	Av. Wt
Oct. to Jan. ...	27.6	54.2	19.6	58.0
Feb. to May ...	63.3	59.5	60.9	59.6
June to Sept. .	53.1	60.3	62.0	58.5
Total for year...	140.0	58.8	142.5	58.9

Experiment II. (Rowett Institute). — A ration which was in use, and which contained no yeast, was fed to a pen of 11 Ancona hens. The same ration with the addition of yeast to the extent of 5 per cent., was fed to a comparable pen of 10 hens. The ration was:—

Mash:—	Proportion.
Bran	4
Sharps	4
Crushed Oats	3
Ground Maize	3
Fish Meal	2

In addition, 2 ozs. of a mixture of equal parts of kibbled maize, wheat and oats per bird per day was fed with oyster shell and limestone grit *ad. lib.* The run was on rough pasture. Table II. gives the egg production per hen for a twelve month period.

TABLE II.

	Yeast.		No Yeast.	
	No.	Av. Wt.	No.	Av. Wt.
Oct. to Jan. ...	14.5	64.6	18.7	65.5
Feb. to May ...	64.2	64.3	63.6	65.6
June to Sept. .	51.7	62.3	49.9	63.2
Total for year...	130.4	63.5	132.2	64.5

Experiment III. (Queen's University, Belfast).—The results referred to under this head are from an investigation undertaken to determine the relative value for egg production of different proteins. This investigation will be dealt with in full in a future publication. It is only the test with yeast which is of interest in the present connection.

One group of seven hens was fed on a ration containing calcium phosphate and yeast. Another group of seven comparable hens was fed with the same ration without the yeast, but with the phosphate increased by the amount present in the yeast, to make it identical in the two groups. From 1st November to 30th September the number of eggs laid in the two groups was:—

TABLE III.

With Yeast.	Without Yeast.
778.	779.

(To be continued.)

White Knight Poultry Farm, East Farleigh.
12th November, 1924.

Dear Sir,—I may say that I am giving up all other poultry papers, as I find "Eggs" is worth all the others put together.

Yours, etc.,

(Signed) F. S. MORGAN

Correspondence.

COST OF PULLETS.

To the Editor of "Eggs."

Dear Sir,—I think Mr. Tyzack is on the right tr when he queries the 5s. estimate as a fair one rearing pullets to six months old, and if he will exc me doing so, I should vastly prefer to put on anot shilling, if not more, to Mr. Tyzack's final figure 7s.

I have not had time to go into the decimal calcu tions, as it were, but I think the experienced busin man will agree with the following remarks and appr mate figures.

Mr. Tyzack's first postulate is 20 pullets and cockerels from 36 eggs set. I think every experienc poultryman will consider this as a most Utop estimate of averages. Given a 70 per cent. hatch average, which is a very fair maximum aver hatching, and 50 per cent. as the average for pulle we have, say, 13 pullets, and if you allow 8 per ce for rearing and accident losses, this unluc number comes down to, say, 12. If, after this, y take grain and mash feed at an average of 13s. c (even in bulk lots this would not be an extravag price for good bought foodstuffs). The cockerels, cluding possibly a small number sold as breeders, take it for argument sake, will just perhaps pay their feed, but certainly not for rent, labour and ov head costs. In any case should there be any pr on the cockerels, it will be but a miscroscopical o that need not be taken into consideration.

Mr. Tyzack bases his hatching costs on hen hat ing. Well, the numerous advertisements for hove and the like, show us at once that hen hatching is a commercial proposition, and every practical poult man knows that if he started up a utility poultry fa and trusted to broodies for hatching, he would ve shortly be bankrupt. So I think broodies may classed with other Utopian ideas.

Then there is the item of 10 per cent. for deprec tion. On paper this is absolutely sound. A hou for instance, after ten years' use, will fetch the sm sum that such a depreciation allowance calls for, b that does not, in many cases, include the yea *upkeep* costs, paint, nails, spare parts, felt, etc., e

These estimates of costs, as worked out—no dou in many cases most correctly, are one of the ways arriving at costs, but in my humble opinion as breeder of many years' experience, the only way get a true bearing of the costs of production is keep regular accounts, entering every item in or ou then at the end of your year—and series of years— you balance everything up *as a going concern ready next year's business*, you will find that your followi year's *young stock* stands you in at nearer 10s. head than 8s., and if you are a pedigree breeder, usi trap-nests, and so on, nothing like 10s. per head w cover you.

In the last fourteen years or more my losses in
ring have never reached as high a figure as 10 per
at., but as you, Mr. Editor, know, there are any
mber of people whose losses, through coccidiosis
d other such "unforeseen" causes, have had very
ich greater losses, and such chances of bad luck
ould be allowed for by all novices, and, therefore,
y should apportion certain sums annually for
erve, sinking fund, fire insurance, etc., none of
ich important items appear in these estimates.
hat about interest, too, on capital?)

Yours truly,
I. H. BURN-MURDOCH.

INCUBATION.

To the Editor of "Eggs."

ear Mr. Newman,—There is one remark in that
eresting article on Incubation that tempts me
relate my experience.

ast season I purchased three hundred Barne-
der eggs from one Dutch and four English
rces. With the exception of one consignment
n the Southampton area, results were most un-
isfactory.

he article in question states, "Breeders of
nevelders tell me they find more difficulty in
ching their eggs than those of any other
iety. That is because the close texture of the
ll is more resistant to the carbon dioxide ex-
ed by the developing chick."

rom the three hundred eggs incubated the re-
ant chicks did not average 20 per cent. The
ilt was practically the same under hens and
cubators, but the peculiarity was that very few
s were chipped until the twenty-second day.

ne hundred Dutch eggs were placed in one
, one hundred R.I. Red eggs from my own
k were placed alongside them. The R.I. Red
s hatched 75 per cent. chicks almost to the
ite. The "Barney's" showed no signs of life
l the twenty-second day, and eventually about
y chicks crawled out, or were helped out, on
twenty-third day. Naturally these were use-
. As there was the same slow motion under
hens, I began to hunt about for a likely cause.
ne day temperature at the time was 35 to 40
ees, with five to six degrees of frost every
t. It appeared to me that the lack of virility
ne chicks was probably due to climatic con-
ns and neglect in storing the eggs in a suit-
place, the germs becoming weakened. The
fic gravity of the eggs was not tested, but
of them appeared above the normal. The
s of many were also thick and hard, perhaps
le above normal.

ng anxious to investigate this peculiarity, at
ommencement of January we placed several
on eggs from our own stock, also several
t eggs were placed in incubators.

Our experiment was, however, quickly concluded, for almost every egg placed under hens hatched a chick, and 75 per cent. chicks were obtained in the incubators; all came through early on the twenty-first day, without the slightest trouble.

Although there is the possibility that Dutch birds might consume some peculiar mineral element, that would affect the texture and hardness of the shell, we should not expect to find this when fed alongside English birds. My conviction is strengthened that the cause was climatic, more so after correspondence with the vendors of the eggs. This present weather should prove whether the cause is temporary or permanent.

It does, however, suggest that vendors of eggs for incubating should take every due precaution in collecting and storing them when an exceptionally low temperature is prevalent.

Does my experience coincide with others?

It is interesting to note that more prominence is being given to the mineral requirements of the high-fecund hen. Do we, however, fully recognise the necessity for, or the value of, iron to the laying hen?

Several years ago I was keenly interested in exhibiting flowers and vegetables, and growing chrysanthemums. I found that in a sunless summer, where water was freely given, the growth of the latter was very soft and sappy. The application of superphosphate had a very hardening and ripening effect on the stem. Again, in growing celery, when fed with potash and superphosphate, an exceptionally hard growth would result, the plant would retain its freshness in the summer heat of an exhibition tent, whereas that fed on a nitrogenous diet would flag beyond recognition.

To what extent have inorganic salts the same effect on the early skeleton of the chicken? Possibly in the near future we may be enlightened on the matter by the findings of actual experiments.

F. W. WAIT.

We may say that these complaints as to the difficulty in hatching Barnevelder eggs have been fairly general, and these reports have been received for two or three years, hence our attributing the trouble to some extent to the texture of the shell. With regard to Mr. Wait's remarks as to iron in food, and its value to the hen, he will recognise that millers' offals are well off in this respect, particularly bran.—(Editor.)

COMMERCIAL EGG FARMING.

To the Editor of "Eggs."

Dear Sir,—All readers of "Eggs" will have seen several letters lately dealing with Commercial Egg Farming as opposed to Poultry-keeping and Breeding.

There have been letters suggesting that it would be a truer economy for the commercial egg farmer to buy his pullets for replacements rather than to breed. Now surely this depends largely upon what scale one is farming.

Let us take first the case of the man who replaces a thousand or more pullets per annum by breeding them. It seems to me that he is bound to have an enormous amount of dead-stock lying idle for the greater part of the year, and the depreciation on this will amount to a considerable figure, whereas if he bought pullets at seven or eight weeks old they could be housed immediately in their permanent laying quarters. It will, of course, mean a lot of other things, such as reduced sales of eggs during the breeding season, and the buying and feeding of cockerels, but these are small items in comparison.

I think I am right in saying that a thoroughly reliable pullet can be bought at seven or eight weeks old for six shillings, whereas I think that if every pullet that was bred was allotted a correct percentage of the depreciation it would be found to be on the wrong side of this figure.

Now, in the case of the small farmer, I think the question arises as to whether it is possible to be a commercial egg farmer in a small way. I think it probably pays to run table birds in conjunction with egg production, in which case surely such replacements as were necessary could be done by means of broody hens, seeing that the breeds usually chosen for fattening are good sitters, and this would, of course, do away with a tremendous amount of dead stock.

I have also noticed lately letters asking whether it is possible to make a living out of poultry. I think the answer is that an establishment consisting of half a dozen hens and a motor car must undoubtedly spell ruin, but with good stock, which is equally essential, I feel sure a steady living can be made.

Yours faithfully,
"OBSERVER."

REMOVING TREE STUMPS.

Dear Sir,—If all "Ardent's" tree stumps are those left from trees felled during the war, they should be thereabouts all dried out by now.

Taking a large anger (about 1¼in. size) he should bore several holes in the flat face of the stump about eight inches deep. Fill each hole with common paraffin, and as this becomes absorbed, keep filling up during the day. Next day put a bunch of straw and a few hedge trimmings or similar material on the stump, and set light to it. The stump will burn practically out, and what is left can be easily removed with a pick, as it will be charred and dry.

I believe it is only necessary to use acid (commercial carbolic) when the tree is alive. Then a few holes are bored obliquely in the trunk, about a foot from the ground, and filled with the acid. Trusting this information will be of assistance to "Ardent."

Yours faithfully,
ERNEST A. MEDWORTH.

Central Service System.

By **A. MORTON NANCE.**

III.—RADIAL ROTARY GRADING AND REARING.

The 2,000 subscribers to "Eggs," having recover from the severe shock to their preconceived ide regarding Poultry Management, they may be inter ted to go a little further into the advantages of t new system. Perhaps reluctantly at first, but as t truth dawns upon them that the old systems mu give place to the new, they will follow with ev growing interest the line of thought which makes progress and ultimate success.

If I were starting poultry-keeping to-morrow, w a few hundreds of pounds, I should get some go breeding pens, and give them plenty of room, bo inside and out in dry, well-aired, and well-light houses. They would be fed on Mr. Tom Newma special breeding pen formula, with which I had go results last season—evidenced in the small numb of dead-in-shell and infertiles—not altogether due the choice of cockerels, though partly so.

I should then erect a Central Service Sectio Poultry House in a square piece of land—a field p ferably—fully fitted out with the exception of dro pings board and roosts.

"Pioneer," or other proved type of hover, wou be used, and my poultry house would be a Brooc house. Each batch of chicks hatched would accommodated in a separate section with mash, br and grit hoppers graded as to size, according to t development of the chicks towards the pullet stag

The cockerels should be picked out as soon as p sible, and removed either to some temporary stru ture or the erstwhile breeding pens, for the purpo either of early marketing or sale to customers their own breeding. Grading the growing sto would have my especial care, so that every one them should have a fair chance of paying me a f profit later on.

With my four sections I could move them as wished, or as the grading process necessitated, either keep the main portion of the pullets of ea hatch in the section where they were placed hatching time, or change their position by a rota movement from one grading division to the other t they were finally settled in their permanent layi quarters.

By this time droppings boards and roosts wou have been fitted into place, and the trap-nests wou be got into working order, and the hoppers chang again and again till full-sized—the food servi having been from the start worked from the centr hall or food section.

As the stock went on laying through their pull year, and their records were being registered, a the usual drastic culling at Jewish Feast and oth holidays, when prices ruled high, the selection

eding having been made, the remaining hens
uld be closed in together in one or more of the
tions for the second year's lay.
Then the new chicks would be coming along, and
now partly brooder house again would be
roughly cleaned out and disinfected. A busy
rch for red mite and the destruction of their eggs
ng completed, the hovers would again be intro-
ed and the small hoppers to replace the larger,
the whole business of Central Radial Poultry
eding and Rearing would begin all over again.
for the old hens, they would be disposed of before
last batch of new chicks wanted their brooder
ion.
s I increased I should require a further piece of
l or field, as and when available to build a new
tral Service Poultry House, on the same lines, till
d a poultry farm of whatever size I wanted.
ach Central Service Poultry House would have
manager, who would have his own special pro-
e, and would be a specialist in it.
d I insufficient means to start with all my capital
nee, I should, in that case, begin with one section
add to it as I progressed till, by slower gradua-
s, I arrived at a similar result.
hope in the near future that a good start can be
e on this system with the small capital of £50,
this will be a great step forward in helping ex-
ice men and other people of limited means to
e a beginning, either for themselves, or co-opera-
y, on sections of land divided into five, ten or
ards, of acres, in a business which, if run on
ect scientific and economical lines, should at least
uce a good living in return for the effort and
al expended, with the avenues of possibility in
various branches and side lines of the industry to
ulate to higher things.

TE A.—I advised in my last article on this sub-
keeping young stock far removed from the old;
to remedy this objection I would suggest keeping
old stock, which are being reserved for the
et, strictly intensively.
TE B.—Although I prefer, for every other
n, rearing in the Colony System, yet it is the
expensive in appliances and labour.
TE C.—By a division of pens and runs tem-
ily, breeding may be carried on in the C.R.R.
ry Houses, which would be a great saving in
se and labour, and better for the keeping of
ds.

SHIRE COUNTY COUNCIL EGG-LAYING COMPETITION
SINGLE BIRD TEST.

RT FOR THIRD MONTH.—Dec. 10th, 1924, to Jan. 6th, 1925.
ree birds in each section have not yet laid. On the whole
ize of egg in both sections is very satisfactory. Several
have suffered from slight colds, which have readily
ded to treatment. Both flocks are in good health and
ion, and no deaths have occurred. Figures are points
e month and total to date:—

SUMMARY OF LEADING PENS.

ht **Breeds—All White Leghorns**—J. Mason, 190, 688; W. J.
er, 221, 602; E. Harrison, 178, 598; E. Harrison, 178, 585;
Ball, 134, 572; Campbell Sheen, 183, 554.
avy **Breeds.**—Mrs. Garnett (B.Rk.), 204, 651; Liverpool San.
203, 642; W. T. Griffiths (W.W.), 186, 614; Tansey Bros.
), 210, 611; W. Evans (W.W.), 155, 549; C, Richards (W.W.),

S.P.B.A. Council Meeting

The monthly meeting of the Council was held at the Memorial Hall, Farringdon Street, on Wednesday, 28th January.

Present.—Mrs. Hunter (President), in the chair, Miss Maddison, Messrs. J. G. Kitson, John Smart, F. W. Wait, R. C. Fletcher Hearnshaw, E. J. Meekings, Bostock Smith, J. H. Dowden, the Treasurer and the Secretary.

Secretary's Report.—The Secretary reported that 198 new members had been elected during the month of December.

Accompanied by Mr. Bostock Smith, he had a very successful lecturing tour in Lancashire; they had visited Preston, Poulton, Kirkham, and Blackpool.

Amalgamation.—He drew the attention of the Council to an article which had appeared in "Poultry World" of January 16th, in which the Editor had referred to certain proposals for the amalgamation of the Poultry Club, N.U.P.S., and the S.P.B.A. A letter had been sent to the Editor with the approval of the President, pointing out that the Council had no official knowledge whatever of these proposals, and that the best guarantee for the unity of the industry was a fuller support of the National Poultry Council. He also read the paragraph in reference to the article which appeared in "Eggs," under S.P.B.A. Notes, of January 28th. The Council unanimously, and without hesitation, endorsed what had been said in the letter which had been sent to the Editor of "Poultry World," and the paragraph which had appeared in "Eggs."

The Register.—The Secretary reported that the Register had met with a most favourable reception. A greater number of appreciative letters had been received than ever before, and members were evidently of opinion that it was the best Register issued by the Association. The Secretary reported that complaints had been received in respect of the conduct of one member. He read the correspondence, and was instructed to summon the member to appear before the Council at its next meeting on 11th March to explain his conduct.

Poultry Club Standards.—A letter was read from Mr. W. W. Broomhead asking the Council to appoint representatives on the committee formed for the purpose of revising the Poultry Club Standards in order to bring them nearer to Utility requirements. After discussion it was agreed that Mr. R. Fletcher Hearnshaw and Miss Maddison should be appointed to represent the Council.

The Secretary read a letter from a new member, who had purchased 150 White Leghorns from a dealer in Lancashire. When the birds arrived they were evidently suffering from roup, and 38 died within a few days. It was agreed that the matter should be submitted to the National Poultry Council with a view to the possibility of action being taken as the matter was regarded as serious.

Food Purchase Scheme.—The Secretary reported that, accompanied by Mr. Bostock Smith, Mr. J. H. Dowden and Mr. Hemelryk, they had interviewed two of the largest firms in London in reference to supplies for the Food Purchase Scheme. Letters had also been received from two other large firms. Satisfactory arrangements had been made, and it now only remained to obtain the views of members upon the proposals, and to see in how far they were prepared to support it. The Council accepted the general principles of the scheme, and the Secretary was instructed to place the proposals before members in an early issue of "Eggs" and to see in what manner they were prepared to support it. It was made very clear that success or failure would depend entirely upon the support obtained from members.

Wellingham Experiments.—The Secretary reported that Mr. Meekings and he had visited Wellingham on the 24th. The house which was being built for the purpose of the experiments was almost complete, and will be ready to receive the first lot of chicks (some 400 White Leghorns) within a few days. Arrangements had been made by which 200 of the chicks could be placed under a hover with floor ventilation, and the other 200 would be brooded in a similar manner, but there would be no floor ventilation. Both lots of chicks would be fed entirely on the lines advised in the article "From Shell to Maturity," given in the Annual Register. They would be kept entirely intensively until they reached the productive stage, then if it was desired to continue the experiment to see how far birds could be kept successfully intensively, arrangements could be made for this to be done. The Council approved of the proposals.

Treasurer's Report.—The Treasurer submitted his report, which was declared highly satisfactory and adopted.

"Eggs" Committee Report.—The Chairman of the "Eggs" Committee reported that the circulation was steadily increasing, and that financially they were in a satisfactory position.

Date of next meeting was fixed for Wednesday, 11th March.

APPLICANTS FOR MEMBERSHIP.

Chambers, S. P., High Clere Hill Top, West Bromwich.
Knight, Mrs. F., "Hill Crest," The Drive, Hunton Hill,
Erdington, Birmingham.
Shellard, Miss D., Ty'r Bont, St. Mellons, near Cardiff.
Hogg, Mrs. K. V., The Mount, Childer Thornton, near
Birkenhead.
Beynon, D. J., Pengellifach, New Castle Emlyn,
Carmarthenshire.
Unworth, J. R., Higher Fold Farm, Tottington, near Bury,
Lancs.
Elisha, H., Spurboro' View, Fifield, near Maidenhead.
Edwards, J., Rock Manor Farm, Carterton, Clanfield.
Morbey, Capt. E. H., Lymph Depot, Patwa Dangar, P.O.
Jeolikote U.P., India
Luke, J. H., Narayanganj, Eastern Bengal, India.
Husband, Mrs., Mohoni Mines, Central Provinces, India.
Henderson, Jas., Beechgrove, Bloughton, Peebleshire.
Soper, Miss M. B., Fiona, Rock, Wadebridge.
Holt, D. A., Sunnyhurst, 77, Monkham's Lane, Woodford
Green, Essex
Berney-Ficklin and Owens, Messrs., Tasburgh Grange P. Farm
Tasburgh, Norwic
Waldegrave, A. V., 168, Swinnow Road, Pudsey.
Milford, G. T., 29, Boundaries Road, Balham, S.W.12.
Browne, Mrs. G., The White House, Cobham, Kent.
Sayer, Miss M. F., St. George's Duck Farm, Sparham Hall,
Norwic
Elder, Hugh, City Mills, Dumferline.
Hopkinson, Mrs. D. Rooth, Pieulach, Compton, near Winchest
Boulter, A. F., 31, Manor Road, Leamington Spa.
Pickard, B., Elmhurst, Melton Mowbray.
Sanford, Mrs., Church Farm, Cadbury, Exeter.
Finch, D., Poultry Appliance Manufacturers, Flitwick, Beds.
Allan, J. Lorraine, Limerigg, Slamannan, Stirlingshire.
Esmond, Jas., Gandy Hall, near Pembroke.
Davies, John, Thrustle Mill, Pembroke.
Kingdon, J. B., Springfield House, Stockbridge, Hants.
Taylor, Mrs. W., Weston House, Nursling, Southampton.
Till, Herbert P., 34, Southwell Road, Norwich.
Ford, Herbert, Whitmore Lodge, Sunninghill, Berks.
Strange, L. F., Westholm, Codsall, Wolverhampton, Staffs.
Burgess, V. G., Green Trees, Goudhurst.
Clargo, E., "Ebenezer" P. Farm, North Leigh, Witney, Oxo
Thrupp, Lieut.-Colonel F. M., Sunny Bank, Oxted, Surrey.

THE NATIONAL UTILITY POULTRY SOCIETY.

NATIONAL EGG-LAYING TEST, 1924-25.

Report for the Second Month—29th Nov. to 26th Dec., 1924.

The egg records for the second period of four weeks sho only a moderate advance on those of the previous month. Th is mainly owing to the exceptional number of birds that hav fallen into a more or less complete moult, and amongst the were a very large proportion of those in lay at the start of th test, and the new birds coming into production have done litt more than fill up the gap. This unnatural moult has been mo prevalent this year than in any of the previous tests at Bentle and it is more than probable the season has had something do with it The weather has been, on the whole, very mild. bu heavy rains, with occasional thick, cold fogs, have been almo continuous throughout the moult, and while the general healt of the birds has been good, they have been very slow in comin on to lay, although many of them have looked like it for long time.

Towards the close of the moult a sharp rise in production w shown, the daily collections, which were as low as 489 eggs, the second day of the moult, rising to 747 eggs on the last day.

Of the most strongly represented breeds, White Wya dottes and Black Leghorns did best. Of the other breeds that d well, and of which several pens are competing, Buff Orpingto put up an average of 14 eggs per bird, and the Buff Rocks per bird.

The total number of eggs laid by the flock was 17,236, average of 8.19 per bird. Those birds that have continued pr duction since the start have done well, and some good reco have been made.

The highest score in the five bird pen sections was 108 eggs (average of 21.6 per bird), standing to the credit of Mr. G. Keit Simmons' White Wyandottes, and several other pens reached average of 20 eggs per bird.

Size of egg shows a still further improvement, and first-gra eggs have risen to 80 per cent., notwithstanding the fact that t standard for these has now reached the maximum.

There was no ailment of a serious nature, but several bir have suffered from colds, swollen heads and minor troubles, a required treatment. In all, six birds out of the 2,108 engaged the test have died since the start.

EGG PRODUCTION OF LEADING PENS.

Section 1. Championship Section (Ten Pullets).—G. B. Metcalf 300 pts.; Lady Seely, 288; R. A. and A. M. Johnson, 282.

Section 2. White Leghorns (Five Pullets).—Fred W. Weeks, 18 Mrs. E. A. Pallant, 155; D. V. Thomson, 152.

Section 3. Black Leghorns (Five Pullets).—Lady Anderso 187; Roland Garrett, 156; J. E. Prentis, 127.

Section 4. Any Other Variety (Five Pullets).—P. K. Berr 122; H. R. Hunter, 116; J. R. Joy and Co., 98.

Section 5. White Wyandottes (Five Pullets).—A. K. S. Alexa der, 178; F. M. Collins, 175; Mrs. E. M. Knight, 169.

Section 6. Rhode Island Reds (Five Pullets).—H. John Berr 195; Lady Dorothy Fraser, 175; Bros. Armstrong-Blackwell, 121.

Section 7. Sussex (Five Pullets).—F Rossall-Sandford, 199; Brooksband, 179; Mrs. M. G. Alston, 140.

Section 8.—Any Other Variety (Five Pullets).—Coaley Poult Farm, 135; Australorps Poultry Farm, 128; Miss K. B. Skinner, 1

London Market Advice Table.

FEBRUARY, 1925. By **A. V. CLARKSON.**

The month of February is the time when most poultry and gg farmers should, from a poultry farming point of view, clear ut all their "passengers."

It must be understood that the London Market can dispose f all classes of birds and if a man has any birds which are seless for stock, or have passed their table poultry properties, e must understand that they can be disposed of, and are etter cleared off the farm rather than left to eat away the ofits, and in a short time this class of poultry will suffer from he competition of best quality chicken.

POUSSIN.—From now onwards there will be a steadily inreasing demand for Poussin.

It must be thoroughly understood that this class of bird must e properly prepared, and anyone not thoroughly conversant with he requirements of the London Market should make enquiries egarding their preparation, before sending. It may be taken s a general rule that the bird should weigh at least 10 ounces ach when killed and clean plucked. Great care should be given the packing, and it is really advisable to pack them in dozens, sing green reeds for packing, but if these are not available use hite paper or grease-proof paper.

CHICKEN.—The London Market is slowly recovering from e slump usually experienced after the heavy Christmas trade, nd producers should communicate with the London Market, ating what they have got, in order that they may be ready hen the demand for Spring Chicken commences.

There appears to be a lack of knowledge amongst producers garding the exact definition of a chicken as applied to the ondon Market. It is rather difficult to describe some things actly, which, to the eye, are most obvious, but for a bird to be ld as a chicken the flesh must be soft and tender. Directly a rd starts to lay the flesh and skin seems to take on a different xture, and the bird cannot be sold as a roasting chicken. The me effect takes place after a pullet reaches a certain age even ough it may not have started laying.

With regard to cockerels, if a bird is fat, and has been cooped , it can be sold as a roasting chicken much longer than usual, t if the same bird had been allowed to run and fight, and herwise enjoy the liberty of action, or has been used in a eeding pen, the skin and flesh take on a very different appearce, and to people who know, and more important still, to people ho buy, these birds are not worth much as regards roasting icken. Members should take the first opportunity available of tting this matter to the test on their farms, and there eyes d teeth will very quickly show them the difference.

HENS.—Old hens sell fairly well alive, and producers should carefully through their stock, and those which are not paying eir way can be profitably marketed alive, rather than held for prospective rise.

Of course, it must be understood that the demand is for hens ich are really fat, and those which are thin and the light eeds do not sell so well.

GUINEA FOWL.—There are quite a lot of people keeping inea Fowl. who do no realise that there is a demand for them the London Market.

The Pheasant season is now over, and from now onwards there ll be a steady demand for Guinea Fowl. These birds should sent killed, but NOT PLUCKED, as distinct from all other rieties of poultry.

EGGS.—The egg trade remains fairly steady, despite the atnpted onslaughts of the various interests which are at work in daily press.

Senders of eggs should realise that it is wise to put their mes inside their egg boxes, in orden to prevent confusion and lay where the salesman receives so many boxes of the same t.

It is essential when sending eggs to pack the pullets' eggs disct from the full-sized eggs. Never send a box of mixed sizes, will only result in the customer losing confidence in your eggs.

RABBITS.—There will be a steady demand at a very good ce for wild rabbits, owing to the fact that the skins are king a good price in London. There is also a steady demand tame rabbits, which should be sent skinned.

TO THE MEMBERS
OF THE
Scientific Poultry Breeders' Association.

It gives me, as President of the S.P.B.A., much pleasure to make public the announcement of Mr. Newman's pending marriage to Miss Murphy, who, as is well-known, is head of the Poultry Division of the Ministry of Agriculture in Belfast.

We sincerely wish them both every happiness in their married life.

E. G. HUNTER,
President, S.P.B.A.

What our Readers think of "Eggs."

Ladyfield, Invergowrie.

Dear Sirs,—I have your letter reminding members of closing of financial year, also requesting support for N.P.C. Therefore please find enclosed P.O. 10s. 6d.—5s. subscription to S.P.B.A., and 5s. 6d. for N.P.C., or to be divided as you think fitting. Trusting your request meets with success well earned. Words cannot express my appreciation of your paper and work of the Society in general.

Yours faithfully,
(Signed) D. PETRIE.

18, Casson Street, Milnsbridge,
Near Huddersfield.

Dear Mr. Newman,—I should like to express my appreciation of "Eggs," and thank you for information I have gained through its columns. I began reading it about eighteen months ago, and have reared all my this year's stock on your formula, and this November I have had more eggs in one day than I had all the month last year out of the same number of pullets.

Yours sincerely,
(Signed) G. CHADWICK.

The Lodge, Copsewood Grange, Stoke, Coventry.

Dear Sir,—I would like to say how much I appreciate your helpful paper, which I have taken up again recently (about two months). I may say I have just started poultry as a business proposition in the nature of a side line to gardening, and, owing to pressure of work, cannot give the time to it which it deserves. However, so far, results are very gratifying, thanks to "Eggs."

I remain, yours faithfully,
(Signed) F. JESSUP.

21, Arthurdon Road, Brockley, S.E.4.

Dear Sir,—You may be interested to know that I have forsaken all other poultry journals, and cleave only unto "Eggs." I share the just appreciation of your other correspondents.

Yours faithfully,
(Signed) R. E. HOOK.

The Willows, Haydock.

Dear Sir,—I take "Eggs" weekly from my local newsagent, and out of the six papers I take it is the only one I can take and read from beginning to end.

Yours sincerely,
(Signed) A. PIMBLETT.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, 30th JANUARY, 1925.

GRAIN AND FEEDING STUFFS.—Fair supplies of English wheat are on offer, and, with a good demand, prices have advanced at all centres, except Bristol, and the average price is now 13s. 10d. per cwt. as against 13s. 8d. last week, and 13s. at the end of December last. Imported wheat is in fair request, and quotations for all descriptions are again higher. Moderate offerings of English barley are in slow demand at recent prices, but imported is in fair request and has a firmer tendency. Oats have advanced in price at Bristol, as imported are scarce, but at London foreign varieties meet a low trade at slightly less money. Maize is in steady demand and dearer at all markets.

Bran is practically unchanged in price, but coarse middlings are slightly cheaper at Liverpool and London. Meals are in quiet demand and mostly sell at recent quotations, but maize meal is inclined to be dearer. Trade for oil cakes is dull, and at London and Bristol linseed cake is reduced in price.

MILLERS' OFFALS.—Bran (British): Bristol, £9 5s; Hull, £8 17s; Liverpool, £9 5s; London, £8 15s. Broad Bran: Hull, £10 7s; London, £10. Middlings—Fine (Imported): London, £10 17s.; Coarse (British): Bristol, £10 10s; Hull, £10; Liverpool, £9 10s; London, £9 7s. Pollards (Imported): Bristol, £8 7s; Hull, £8 10s; Liverpool, £8 2s; London, £8 15s. Rice Bran: Bristol, £9 15s; Liverpool, £9 5s. MEAL.—Barley Meal: Bristol, £12 17s; Hull, £12 18s; London, £13 7s. Maize Meal: Bristol, £12 12s; Hull, £12 3s; Liverpool, £12 5s; London, £11 12s. Maize Meal (S. African): Hull, £11; Liverpool, £11 5s. Maize Germ Meal: Bristol, £12 5s; Hull, £11 5s; London, £10 15s. Maize Gluten Feed: Bristol, £12 5s; London, £11 5s. Locust Bean, Meal: Bristol, £9 7s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £14; Hull, £13 8s; London, £13 15s. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £20 10s; London, £21.

EGGS AND DEAD POULTRY.

British eggs are more plentiful, but trade is dull at a reduction of 1s. 6d. to 2s. per 120. All descriptions of imported eggs are plentiful and still further reduced in price. Dead poultry, where changed in price, is cheaper, the markets being well supplied and the demand only moderate.

Week-end Prices—Eggs (per 120): British: 24s 6d, 23s 3d; Irish: 22s 0d, 21s 3d; Danish: 23s 1d, 22s 0d; Dutch: 22s 9d, 21s 9d; Styrian: 17s 3d, 16s 9d; Belgian: 20s 6d, 19s 9d; Italian: 19s 3d, 18s 6d; Egyptian: 10s 0d, 9s 0d; Moroccan: 13s 6d, 12s 9d; Argentine: 16s 9d, 16s 3d.

Dead Poultry (per lb.): Fowls—Surrey: 1s 9d, 1s 6d; Irish: 1s 3d, 1s 0d; Others: 1s 4d, 1s 2d. Ducks: 1s 5d, 1s 2d. Geese: 1s 2d, 1s 0d. Turkeys: 1s 5d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 2s 5d; Second, 2s 2d. Birmingham: First, 2s 9½d; Second, 2s 7½d. Bridgwater: First, 2s 5d; Second, 2s 4d. Carlisle: First, 2s 10d; Second, 2s 6d. Chelmsford: First, 2s 6½d; Second, 2s 3½d. Derby: First, 2s 7d. Dorchester: First, 1s 11d. Exeter: First, 2s 4d. Hereford: First, 2s 4d. Ipswich: First, 2s 6d; Second, 2s 0d. King's Lynn: First, 2s 6d; Second, 2s 3d. Lincoln: First, 2s 9d. Llandilo: First, 2s 4d. Mold: First, 2s 6d; Second, 2s 5d. Newport (Mon.): 2s 6d; Second, 2s 4d. Norwich: First, 2s 3d. Oswestry: First, 2s 8d; Second, 2s 7d. Penzance: First, 2s 0d; Second, 1s 11d. St. Ives (Hunts): First, 2s 3d; Second, 2s 1¾d. Salisbury: First, 2s 2½d; Second, 2s 1d. Shrewsbury: First, 2s 4d; Second, 2s 3d. Skipton: First, 2s 4d. Truro: First, 1s 11d. York: First, 2s 10d; Second, 2s 9d.

FOWLS.

Per lb.—Birmingham: First, 1s 2d; Second, 10d. Derby: First, *7s 0d; Second, *3s 6d. Exeter: First, 1s 6d. Hereford: First, 1s 4d; Second, 1s 3d. Ipswich: First, 1s 6d. Lincoln: First: *5s 6d; Second, *4s 0d. Llandilo: First, 1s 7d; Second, 1s 4d. Newport (Mon.): First, 1s 8d; Second, 1s 4d. Shrewsbury: First, 1s 5d; Second, 1s 3d. Truro: First, 1s 5d. York: First, *6s 0d; Second, *5s 0d.

DUCKS.

Per lb.—Birmingham: First, 9d; Second, 8d. Derby: First, *8s 0d; Second, *4s 0d. Exeter: First, 1s 6d. Hereford: First, 1s 4d. Ipswich First, 1s 6d. Llandilo: First, 1s 7d; Second, 1s 5d. Newport (Mon): First, 1s 6d.

*Per Head.

NUTRITIVE REQUIREMENTS OF POULTRY.

This Article, the first portion of which appears on Page 83, is published by the courtesy of the Editor of the "Journal of the Board of Agriculture for Scotland."

"Eggs."
The Official Organ of the Scientific Poultry Breeders' Association.
Wednesday, February 4th, 1925.

CONTENTS.

EDITORIAL ... ...
MIRFIELD AND DISTRICT POULTRY-KEEPERS' ASSOCIATION ... ...
LANCS. U.P.S. EGG-LAYING TEST ... ...
MODERN POULTRY FEEDING ... ...
ANSWERS TO QUERIES ... ...
POST-MORTEMS ... ...
THE INTERNAL MECHANISM OF THE EGG-LAYING MACHINE ... ...
NATIONAL POULTRY COUNCIL AT CARDIFF ...
S.P.B.A. ... ...
THE NUTRITIVE REQUIREMENTS OF POULTRY...
CORRESPONDENCE ... ...
CENTRAL SERVICE SYSTEM ... ...
S.P.B.A. COUNCIL MEETING ... ...
CHESHIRE C.C. EGG-LAYING COMPETITION ...
NATIONAL U.P.S. EGG-LAYING TEST ... ...
LONDON MARKET ADVICE TABLE ... ...
MARKET REPORT ... ...

Contributions.—The Editor will always be pleased to cons contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existenc "Eggs" to their poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, Beeches. Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Bee Rudgwick. Sussex.

All communications with regard to Advertisements should addressed to Mr. S. H. Burles, "Eggs," 94. Farncombe St London, S.E.16. Telephone HOP 894.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," imperative that new advertisements and alterations are rec by FIRST POST ON FRIDAY MORNING to ensure insertion i following Wednesday's issue.. It is hardly necessary to add the earlier in the week we receive copy the better it is for e one concerned.

PROOFS.

We cannot guarantee to submit proofs unless c plete copy is to hand by FIRST POST ON T MONDAY PREVIOUS TO THE FOLLOW WEDNESDAY WEEK'S ISSUE.

Classified Advertisement Rates will be found at top of first of classified advertisements.

SPECIAL NOTICE.

We frequently receive complaints from our readers to the that when replying to advertisers, letters are often ret owing to the address given in the advertisement being insuffic For the sake of both our readers and advertisers, we would fore ask every advertiser to have as full an address as po inserted in all announcements.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association
WEDNESDAY, FEBRUARY 18th, 1925.

Editorial.

CHICKEN-REARING. —Continued.

Care must be taken to prevent overcrowding. his is one of the fruitful causes of debility, and ten results in a predisposition to disease of the spiratory organs. This is a matter of observaon, and can easily be remedied. I am speaking overcrowding in the brooder now, but it must ot be forgotten that it may take other forms, such overcrowding the ground, and allowing growing icks to crowd in the corner of a house on the oor. When this is the case they cannot get suffient oxygen so necessary for healthy growth. It a good plan to get chicks to perch at an early ge, as they develop more quickly and healthily. a proper perch is provided they will not get ooked breast bones. Slater's lathes, nailed half inch apart, with some hay on top, nine or ten a row 18 inches from the ground, will answer lmirably.

If wet mash feeding is preferred, you can use scuit meal, scalded and dried off with thirds, ead and milk (this should, however, be given in crumbly moist condition, and not sloppy), oateal moistened with milk, or equal parts Sussex ound oats, and thirds, moistened with milk.

Chicks should be made to scratch for all their ain, as exercise helps in the better assimilation food. All the chicks taken from the incubator ill not be rearable, and all that you may rear are ot all worth rearing. It is folly to attempt to ar weakly and under-sized chicks, and right from e shell to maturity there should be constant ading, otherwise there can be no profit, and the eakly chick is always predisposed to disease and erefore a menace to the rest. You get those th "big wing"; that is, the wings trail along e ground, and you see the long, sharp beak, the ll eye and the pale face. These are diseased icks and should be killed. No amount of coddling ll rear them to healthy maturity. Then there e the long gawky chicks, which appear to have tgrown their strength. They, too, will have pale ces, and if they are of the yellow-legged variety, u will notice that the shanks are very pale, nost white. As they develop they will have no dy, the plumage will be harsh, the neck rather long, the lobes, wattles and comb will present a dry and wrinkled appearance. These, too, are worthless. They will not produce eggs. Chicks which are stunted in growth are often so when they have survived—I won't say recovered—from an attack of B.W.D., or Coccidiosis, and they may be carriers, so that it is wise to kill them. There are always different sizes in a big brood, and the weakest generally go to the wall. If you grade them into sizes they all get their chance, and they will develop into profitable pullets. Neglect to do so, and the weaker will be bullied and underfed, consequently healthy development is impossible.

There is always a time when growth seems to be checked. Directly it is observed a change of ground is desirable, and a little more variety in the food will be helpful. A trying time is when the chicks are shedding the chicken feathers, and growing their adult plumage. The addition of 4 per cent. linseed meal to the mash will help them considerably. A good feed for chicks which appear too sluggish in growth is to get some good oats, cover them with cold water, allow them to simmer on the fire until it is absorbed, then dry off with equal parts thirds and bran, and feed in troughs.

In very hot weather it is most essential that chicks should be sheltered from the sun; few people gauge the mischief which is done when no shelter is provided. When the wings are drooping, the beaks open, and they are gasping with the heat, it may undo weeks of care. I need hardly mention how necessary it is to keep them free from insect pests.

There is always the fear of overfeeding. The chief danger of this is during the first fortnight of a chick's life. After that, unless they are closely confined, and have no chance of exercise, there is little fear of their being overfed. It is nearly impossible to overfeed a growing chick or a laying hen. A considerable amount of underfeeding is always going on. With the chick, I generally find this takes place in the months of July and August, with the result that pullets are late in starting to lay and often lay intermittently. Pullets should be in a condition to lay when they are put in their winter quarters in September. By that, I mean they should be in plump condition, for they must have fat in their bodies if they are to lay well. So often I get letters telling me pullets are not laying, although they look in splendid condition. In 90 cases out of 100 the advice to give a little more food, preferably maize, gives the desired result.

I shall say little about disease, and that only from the point of view of prevention. B.W.D. is the greatest scourge. Without expressing definite opinion, there is some reason to believe that every chick is a carrier of the germs of this disease, and that environmental conditions may lower the resistant power and cause it to become active. It is so necessary then to avoid chill in the incubator or brooder, or too high a temperature in either. There is no known cure, and the external symptoms are often the same as those of pneumonia and other diseases. For this reason it is advisable to kill all weakly chicks, and any which show signs of diarrhoea, as infection is through the excreta. If an outbreak occurs the only thing that can be done is to thoroughly disinfect the brooder, remove the chicks at once to fresh ground, and place the drinking vessels and feeding troughs in such a position that they cannot be fouled, by constantly watching and killing at sight any chick which looks sick.

Coccidiosis, another great scourge, which generally attacks the chick from three to four weeks old, shows rather marked external symptoms. The chicks always huddle, the wings droop, and the eyes are nearly always closed, giving the birds a dazed appearance. If an outbreak occurs, it is advisable to kill all sickly chicks at sight, remove the others to fresh ground, and continue to do so until you have stamped it out. There is no real chance of fighting this disease if the chicks are not continually moved to fresh ground, as the egg of the parasite is voided in the droppings, and is picked up by other chicks which in their turn become infected. The best treatment is to give 15 grains of powdered catechu to the gallon of drinking water, and allow nothing else to drink. Chicks which survive attacks of these two diseases should never be bred from, as they will almost certainly be carriers, and their chicks would be infected in the eggs.

Heavy losses are incurred from chill, or pneumonia in various forms. This may be caused when the chicks fall into the nursery drawer of the hot-air incubators, in the removal from the incubator to the brooder, to exposure to cold winds ; a very common mistake, and which is accountable for a high mortality, for five minutes exposure to a cold wind will kill any young chick, and it is very easy to protect them from it. The most common cause of pneumonia, however, is the foul air in brooders and under hovers, and I again call you attention to the question of floor ventilation to get rid of this foul air. In cases of chill a good and effective remedy is 40 grains of citrate of iron and quinine to the gallon of drinking water, allowing the chicks nothing else to drink.

Just one more word on leg weakness. I have told you that the main cause is due to the atmosphere in brooders and hovers, but it may also be due to deficiences in the diet, or of its being of too stimulating a nature. If plenty of fresh green food is supplied there is not much fear in the former case ; in the latter, which occurs fairly frequently, the best treatment is to mix one teaspoonful of cod liver oil to every pound of mash.

I have said nothing as regards litter for chicks. Personally I prefer straw chaff mixed with earth, Peat moss becomes too dusty, and this causes irritation of the respiratory organs and the eyes. On one or two occasions I have known bad losses from this.

The separation of the sexes as early as possible is very important, especially with the light breeds. Many good birds are ruined through their being allowed to run together.

I will not speak to you of the necessity of cleanliness as one means of preventing disease, anyone who hasn't enough intelligence to know that should never keep fowls. I would, however, warn you of the absurdity of attempting to rear weakly chicks. Drastic culling, which should begin directly they are hatched and which should be continued until the pullets are graded for their laying quarters, is a sound and businesslike policy. A weakly chick can never be a profitable one, and is always more or less a menace to the rest of the flock because of its liability to disease.

NORTHERN UTILITY POULTRY SOCIETY'S LAYING COMPETITION, 1924-25.

THIRD REPORT—December 27th, 1924, to January 23rd, 1925.

The weather during the first ten days of this period brought a succession of gales, one day bringing snow and hail with lightning and thunder, after which conditions improved, when we had ten days of fine with a fair amount of sunshine and slight frosts on three occasions, lasting only a few hours. Altogether sixteen days have been fine, mild and open.

The yield of eggs is satisfactory in regard to numbers, but the quality compares very unfavourably with last year's, and it appears that the 100 allowance of second-grade eggs will operate much sooner this year than last; while there are quite a number that fail to score at all.

The health of the flock has been good, ovarian breakdowns being responsible for what little sickness there has been. Five birds have died from peritonitis.

DUCK SECTION.

The health of these competitors has been excellent. These competitors on the whole are very slow in production, only one pen laying anything like normal for ducks, their total being 109—108 first-grade, and in common with the pullets, the eggs are not what is generally expected from ducks in size.

EGG PRODUCTION OF LEADING PENS.

Figures are Eggs and Points respectively:—

Section 1, Championship (10 Birds).—Messrs. Longworth Bros. (W.L.), 369, 369; Mrs. Canning Roberts (W.L.). 365, 365; Arthur Snowden (W.L.), 405, 362.

Section 2. White Leghorns.—Norman F. Kimberley, 221, 221 William McMahon, 187, 187; F. R. Welch, 200, 184.

Section 3. White Wyandottes.—Thomas Pinder, 249, 249; Mrs Alec Wilson, 204, 204; G. Ware, 201, 201.

Section 4. Any Other Variety (Non-Sitting).—Philip K. Berry (B.L.), 143, 143; M. Flaherty (An.), 98, 98; Robert A. Fawsett (B.L.) 93, 93.

Section 5. Any Other Variety (Sitting).—Tom Gardner (R.I.R.) 213, 213; F. and T. Lumb (R.I.R.), 208, 208; A. Sharples (R.I.R.) 195, 195.

Section 6. Two Birds.—E. J. Stone (W.W.), 103, 103; Mrs. A Stow (W.L.), 84, 84; Bolton and Gardner (W.W.), 78, 78.

Section 7. One Bird.—Frank Heyworth (W.W.), 65, 65; H. Perc Thubron (W.W.), 63, 63; R. K. Tallis (W.W.), 60, 60.

Section 8. Small Breeders (Five Birds).—E. M. Saul (W.L.), 227 227; W. Machin (W.L.), 227, 194; Samuel Millward (W.W.), 194, 15

Section 9. Cross-Breds.—Mrs. Clara Egar (B.M. and W.W.), 25 254.

Section 10. Five Ducks.—Mr. and Mrs. Gwynne Evans (K.-C. 165, 165; Wilson Beattie (K.-C.), 160, 160; Chivers and Sons (K.-C. 103, 103.

Section 11. One Duck.—Oscar Brown (K.-C.), 41, 41; Mrs. E. Kirkley (W.R.), 18, 18; A. N. Dickson (K.-C.), 12, 12.

Modern Poultry Feeding.

By **TOM NEWMAN.**

THE NUTRITIVE REQUIREMENTS OF POULTRY.

(Acknowledgment should have been made in our issue of February 4th, that we were able to publish the important and instructive article under the above title through the courtesy of the Editor of the "Journal of the Board of Agriculture for Scotland." We apologise for the omission, which was due to an oversight.)—Editor.

It is some years since I first introduced yeast to readers of "Eggs" as a poultry food, before that time it had not been used in this country, and it was then a cheap and economical food, now it is no longer so. That was before the days of the vitamins, and, so far as I am aware, there were then no yeast extracts on the market. It was considerably cheaper than fish meal or meat meal, and I recommended that it should replace one-half of either of these foods, firstly because the protein was good value, secondly it was an appetiser, and I believe that it assists in the better assimilation of other foods, and thirdly because it was cheap. I still believe it has a great value, and if prices were right would always recommend it, because, from observation and the scores of reports which have been sent me, I believe that the general health of the birds is improved by its use. One must be guided by the average of a large number of results. Where birds are on good free range it would probably have no beneficial result, but on the commercial farms, where 400 are running to the acre, there is evidence that it is of value, although in no case do I think it economic to feed it at present prices. For a long time I have pointed out that we get all the "B" vitamin required in cereal grains and offals, not to speak of green food.

The very interesting report by Dr. Orr and his assistants would seem to suggest that yeast has not the value which we have attributed to it. One must heartily agree with the statement that we are not warranted in assuming that the whole value of yeast depends upon its content of vitamin "B," and in advocating its use merely as a source of this factor, and that there is no evidence to show that the average poultry ration is deficient in this factor.

We are told that the present communication is intended to give an indication of the results of experiments devised to show the influence on egg production of the **addition** of yeast to ordinary rations for poultry kept under practical conditions.

The tests have so far demonstrated that the addition of yeast to the ration has no effect upon egg production, the results in the yeast or no yeast pens are approximately the same. If one may comment on the second experiment, conducted at the Rowett Institute, where 5 per cent. of yeast was added to a mash containing a fairly high percentage of fish meal, which supplied all the protein and phosphate of lime, it is hardly possible to expect any increase in the egg yield. This would also apply to all the rations used in these experiments. For convenience I will quote this ration here.—

Bran 4 parts.
Sharps 4 parts.
Crushed Oats 3 parts.
Ground Maize 3 parts.
Fish Meal 2 parts.

In addition a mixture of 2 ozs. of equal parts kibbled maize, oats, and wheat, oyster shell and limestone grit **ad. lib.**

If any of these mashes had been deficient in protein, or had the proteins been **incomplete,** we might have expected somewhat better results from the use of the yeast. In the formulas I have given, which include it, it has always been as a substitute for one-half of the animal protein. An experiment which would be of interest would be one in which a low percentage of animal protein was used, supplemented by dried yeast, as compared with one which depended solely on fish or meat meal. This is of not much importance now, however, in view of the high cost of yeast. What is surprising is, that this product is so eagerly bought up on the continent, and it is almost wholly due to the demand from abroad that the price has become so high here.

What is of importance is, that we shall find a cheaper form of protein than fish or meat meal, and the experiments which we conducted at Wellingham last year, although on such a small scale, seemed to indicate that we have found it in soya bean meal, which is at once the cheapest and best substitute for yeast.

I append here a report of an experiment which appeared in "Poultry Science," and which was conducted at Pennsylvania State College, with a view to ascertaining the value of dried yeast as a supplement to a good poultry-laying ration.

The basal ration was equal parts wheat, bran, wheat middlings, oat chop, maize meal, and meat scraps.

The results do not coincide with those obtained by Dr. Orr and his assistants, but, if I may venture to say so, the conclusions arrived at are erroneous. In the first place the "B" vitamin did not affect the question at all, the increased appetite was probably induced by the increased production, caused by the exceedingly high protein content. Well, the bitterness of the yeast may or, shall I say, did prove an appetiser, just as our sherry and bitters do. I add here part of the comment I made on this experiment when it was published some months ago. The one interesting point is that there was a distinctly beneficial effect with White Leghorn pullets which were fed yeast under artificial light. But it is more than possible that this effect could have been obtained with soya bean meal.

COMMENT.

If one may venture to criticise the experiment it is on the ground that the quantity of yeast used, even at 15 per cent., was greatly in excess of what was necessary; and, secondly, that the results obtained were attributed to its content of "B" vitamin.

Let us ask ourselves this question: Was it the "B" vitamin that stimulated the better appetite, better growth, high egg production, and also influenced the size of eggs and their weight?

Is there not a simpler solution? Do we not take our sherry bitters to stimulate the appetite? Does not a better appetite mean a greater consumption of food, a greater consumption of food lead to better growth? Do we not know that the production of eggs is influenced to a great extent by the quantity of food the bird consumes, and will this not influence the bodily condition, and do we not know the better the bodily condition, the better the size and weight of eggs produced?

We may be confident of this, that in a ration which contains a high percentage of miller's offals, the content of "B" vitamin will always be adequate.

I am a great believer in the value of yeast, but believe 5 per cent. to be adequate; its bitter taste makes it a good appetiser, and the protein, in combination with others, is also valuable, but to feed it for its "B" vitamin content alone, or to appraise its value on that alone would, in my humble opinion, be a bad mistake. We cannot afford, and neither is it necessary, to pay high prices for "B" vitamin.—("Eggs," October 22nd.)

EXPERIMENT.

The problem really in need of solution is said to be:—

> "Can yeast be used to advantage in supplementing the better type of poultry rations? In other words, will an excess of vitamin "B" over that ordinarily contained in the better poultry rations stimulate better appetite, better growth, higher egg production, also influence the size and weight of eggs?"

There were eight pens of 45 pullets each. Two pens were under artificial light, one received 25 per cent. dried yeast, the other received none.

The pen receiving the yeast laid eggs to the value of 4.308 dollars. That without laid eggs to the value of 3.899 dollars.

One pen was given 25 per cent. yeast, and another 15 per cent. The value of the eggs laid by the pen receiving 25 per cent. was 3.248 dollars, that receiving 15 per cent. 3.752.

With two pens receiving 25 per cent., the one on wet mash, and the other dry, the former laid eggs value 3.584 dollars, and the latter 3.284.

With two pens receiving 15 per cent., the one on wet mash, and the other on dry, the former laid eggs value 3.707 dollars, and the latter 3.752.

In each of the five pens receiving yeast, the value of the eggs laid was greater than in the three pens which did not receive it.

The conclusions arrived at were that:—

(1) Pullets and hens not forced for egg production, and under natural conditions, employing a good ration with adequate yards, did not appear to need an additional amount of vitamin "B" to maintain their egg production and body weight.

(2) In most of the experimental groups the pullets and hens which were fed yeast ate slightly more food, and produced more eggs. The hens and pullets which received yeast maintained their body weight in a more satisfactory manner than those which did not receive the yeast.

(3) Yeast had a distinctly beneficial effect when White Leghorn pullets were forced to undergo a longer feeding and exercising period by the use of artificial light. Under these conditions pullets developed better, laid more eggs, and the eggs were larger and heavier. It is possible that under these conditions that the vitamin "B" content of good poultry rations is not adequate for maximum results.

It should be mentioned here that each pen received a mash of equal parts wheat bran, wheat middlings, oat chop, maize meal and meat scraps.

LAINDON LAYING TEST.

FOURTH PERIOD.

Section 1. (Light Breeds), Five Pullets.—F. Freeborn, 244 eggs; T. Miller, 214; H. Maycock, 205. Monthly Certificate: F. Freeborn.

Section 2. (Heavy Breeds), Five Pullets.—E. V. Bazin, 253; W. Belsham, 193; H. Maycock, 169. Monthly Certificate: W. Hall.

Section 3. (Light Breed), Single Bird.—East Anglian P.F., 66; W. Dillenz, 63; W. Dillenz, 61. Monthly Certificate Miss N. Grubbe.

Section 4. (Heavy Breed), Single Bird.—C. H. Sheridan, 58; Miss Bergman, 52; H. Jones, 53. Monthly Certificate: W. Hall.

Section 5. (Gift).—E. V. Bazin, 70; H. Maycock, 59; W. Dillenz, 55. Monthly Certificate: W. Dilleny.

First-Class Certificate.—W. Dillenz, 26 eggs.

SOUTHERN IRELAND LAYING TRIALS.

1924-25. HENS AND DUCKS.

RESULTS FOR PERIOD—16th October to 31st December, 1924.

Section 1. (Non-Sitters).—Mrs. L'Estrange, Killylea (W.L)., 297 eggs; Langford Lodge P. Farm (W.L.), 273; Mrs. N. Cryan, Soefin (W.L.), 239.

Section 2. (White Wyandottes).—Lady Dunleath (W.W.), 329; Mrs. L'Estrange (W.W.), 334; Mrs. Porter-Porter (W.W.), 317.

Section 3. (Heavy Breeds other than White Wyandottes).—Mrs. E. Marshall, Whitecross (R.I.R.), 314; Mrs. D. Chearnley, Cappoquin (R.I.R.), 301; Miss E. M. Scanlan, Ballagh (R.I.R.), 278.

Duck Competition (Four Ducks to each Pen).—Mrs. Lucy J. Tallent (F and W.R.), 208; Mrs. E. Marshall (W.R.), 207; Miss E. Cavanagh (F. and W.R.), 193

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to **Major C. G. Saunders. D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (**NOT** from **Major Saunders**).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

L. K. (Somerset) is not getting eggs, and tells me that he gives a weekly dose of Epsom salts as a preventive against "fatty degeneration." How strong the dose is he does not say, but he may rest assured that while he is feeding as bulky a mash as he is doing at present, there will be little fear of fatty degeneration, and little hope of eggs. If he reduces the bran in the mash by two parts, and the clover meal by one, and adds one part maize meal to the mash, he may hope for some improvement. At the same time it would be advisable to reserve the salts until he has some sick birds. It is so hard to understand why people will persist with this absurd idea that Epsom salts are in any way beneficial to a healthy laying hen. In answer to his other question, I should prefer the Buff Rock to the Wyandotte for a cold clay soil.

J. T. B. (Carterton) asks what would be the result of crossing Ancona hens with a White Leghorn male. Could the chicks be distinguished for sex when hatched? The cross would be good layers of large eggs, as the white of the Leghorn inhibits other colours. There could be no distinction of sex when hatched. The great majority of the progeny would be white, some would show black ticking. His sample of ground oats are good value at 15s. 6d., but the fish meal contains an excess of oil, and probably explains the diarrhoea, from which his pullets are suffering. He would be wise to discontinue, or it may result in serious trouble. The "bad" egg he sends had been retained too long in the oviduct, probably by a bird in a slightly overfat condition.

R. M. (Hunslet) sends 24 eggs which failed to hatch. In the majority of these the germ died at a very early stage, indicating the fault to be with the stock birds. In the others the chick was well developed, but shrivelled, the membrane was tough and dry, which points to the eggs being stale or else very badly stored. I do not think they could have dried down so rapidly, as this is in the incubator, but he is advised to keep both felts in until the 19th day, and then remove only one, and to supply moisture from the first. He is feeding the following mash:—Bran, two parts; Biscuit Meal and Sussex Ground Oats, 1½ parts each; Pea Meal, half part; Meat Meal, one part; all by measure. He is getting several double-yolked eggs, and asks if this mash will do for his breeders. It is too forcing; the double-yolked eggs should have told him that. If he continues it he is likely to get pullets with prolapsus. Reduce the biscuit meal and ground oats to one part each, and the meat meal to half part. For his breeders I would add another part thirds.

Worried (Warwick) bought 100 day-old chicks, which appeared weakly on arrival. He thinks they were chilled on the journey. He has lost over forty. There was very little packing in the boxes, and now he wants to know what to do. If he had sent his address I would have written to him, but by the time he reads this the probability is that there will be nothing to be done. I am afraid he has no claim against the vendor, unless he can prove negligence, and that the chill was contracted on the journey. The best treatment would have been to have given 40 grains of citrate of iron and quinine to the gallon of drinking water, and allowed nothing else to drink. In cases like this one must act quickly—not write for advice when the mischief is irreparable. One might impress on vendors the necessity of packing chicks with hay. It is astonishing the number that perish every year, simply because they are badly packed, and it causes the greatest dissatisfaction, and loses many a customer and reputation. There is no box made which will carry chicks safely through a long journey without packing.

W. S. (Wokingham) sends samples of toppings, which her corn merchants recommended her to buy on the 'phone. They are not a good sample, and, as she says, contains a high percentage of fine bran. The ground oats at 16s. are, however, very good value for the money. I must thank her for her kind appreciation of "Eggs," and in reply to her remark that "I never seem cross," she must remember that sound cannot be conveyed to the columns of "Eggs."

"Novice" (Warnfield) purchased three dozen dozen White Leghorns and four dozen R.I. Reds as day-old chicks, and has 17 White Leghorn and 20 R.I. Red pullets. The Leghorns laid particularly well from October to the end of December, then they seemed to stop nearly altogether. The R.I. Reds he intends to get rid of, as they have not laid well. The formula he is using in quite satisfactory. I cannot think that the drop in the egg yield is due to the feeding, providing of course, that the ingredients are satisfactory as to quality. I think he had better handle his birds, and see what their bodily condition is. Perhaps some little adjustment in the feeding would bring them into production again, but it is not always the feeding that is at fault when these sudden drops in the egg yield occur. I am sorry I cannot advise him further than this, as I have not sufficient data to go on.

G. W. S. (Newbiggin) is not getting any eggs, and is feeding as follows:—One handful each of two measures of wheat, two whole oats, and one cracked maize, buried in the litter, as the first feed, greens consisting of cabbage and turnips when obtainable. In the afternoon he has been giving a wet mash of:—Four measures middlings, four bran, one S.G.O., and a handful of fish meal. We are not surprised that he has not been getting eggs on such feeding as this. The birds must have been starved, although they get as much of this wet mash as they can eat. Now he intends putting them on the following mash:—Six bran, three S.G.O., two maize meal, six middlings, one fish meal, and two meat and bone meal. The combination of meat and bone meal and fish meal is unnecessary, and the quantity excessive. If these parts are by measure, one and a half measures of fish meal or meat and bone meal would be sufficient. Also he would be well advised to reduce the S.G.O. to two parts. The sample of fish meal he sends is a good one, and the meat and bone meal just fair. He has been using a much advertised spice in the mash, but it has not helped to produce more than two eggs a day from 23 birds. Now he is going to use another. I suppose we shall never teach people the absurdity of hoping to produce eggs by these spices. A spice is not a food, but an irritant, and if the birds want anything of that nature a teaspoonful of mustard to every six birds will be as effective, or they could be given iron in the drinking water at the following rate:—Dissolve two ounces of powdered sulphate of iron in a quart of water, and add one teaspoonful to every pint of drinking water.

POST-MORTEMS.

W. S. The post-mortem examination of the chicks showed the cause to be Coccidiosis, the findings being verified by microscopical examination. The droppings and the soiling by the same of food and water utensils are the chief means of spread, so that by keeping the former swept up and burned, and the latter free from contamination, control can be gained over the organism. The affected birds should be isolated and treated with catechu water, which is prepared by dissolving one dram of the powdered drug in every three gallons of drinking water. This should be continued for a month at least, and no other water allowed. A change to fresh ground is advisable, the old runs being turned over and heavily limed before further use. If this is not possible, the runs can be disinfected by watering with chloride of lime water, three ounces of the lime to the bucketful.

E. A. B. B.W.D. is the trouble that has caused you such heavy losses, all four chicks showing the typical post-mortem lesions of that disease. As treatment is of little value, attention should be concentrated on preventing the spread of the infection to others broods, and to protect future hatches from falling victims to the disease. The affected flock should be strictly isolated, and every care taken not to carry infection from them to healthy birds, the hands, boots, and every article of equipment in contact with them are the channels of infection. Before further use everything that these birds have come in contact with should be disinfected, or, if of little value, burned. Special attention should be paid to the incubator, or the next hatch may suffer, and no fresh birds should inhabit the quarters of the infected ones until they have been thoroughly cleaned and made safe by disinfection. The disease may gain entrance to a flock either through the agencies of the above-named or by eggs from "carrier" hens, and this brings up the question as to whether it is advisable to breed from any survivors of an infected flock, because a certain percentage will, in all probability, be "carriers," and so continue the disease in their progeny.

H. R. The post-mortem examination of the White Leghorn pullet showed the cause to be degeneration of the liver, and the digestive troubles following disease of that organ. There was no sign of tuberculosis or other infectious disease The lameness you mention is quite commonly associated with liver troubles in birds. Fish mea containing too great a percentage of oil and fe heavily is often conducive to this condition of th liver, which is nearly always due to dietetic errors

T. F. W. Pneumonia is the cause of the trouble both lungs being quite solid. The predisposing causes of this type of the disease are exposure to wet and cold, producing chilling, which by driving the blood away from the surface of the body cause congestion followed by inflammation of the lungs fumes and poisonous gases from the heating unit and bad air, due to the imperfect ventilation o brooders, etc. Correction of any of the above conditions should prevent further casualties, but individuals that are already affected stand little chanc of surviving. It would have been better if you ha sent me more than one chick, as sometimes, whe only one is examined, it turns out to be atypica of what is affecting the others, and one may b led to an erroneous conclusion as to the cause (no as regards the individual) of the mortality of th flock.

E. H. The post-mortem examination of th chicken showed the body to be well nourished, an free from disease. The only abnormality to b discovered was in connection with the heart, whic stopped with both ventricles tightly contracted, but the auricles dilated. This heart condition, combined with the history of the case, in my opinion, indicates poisoning by some plant that has a special action on the circulatory system. Fox Glove or Digitalis is one of these, and it would be wise to search for this plant on the range. The cod liver oil certainly would not produce this condition, especially in the doses that you are giving, which are quite safe. The only effect too much of this oil has is to affect the digestive system and cause liver troubles. It is possible, of course, that the feed may contain some injurious seeds that may contain the same alkaloids as Digitalis, or plants of the same family, and it would be as well to examine the grain mixture, and have any doubtful seeds identified.

A. S. I could find no signs of actual disease in the chicken, but the digestive organs were soft and flabby and suggestive of nutritional trouble, and failure to assimilate. A good supply of green food should be provided, and, failing this, add alfalfa meal to the ration, and raw swedes to pick at. A tonic in the drinking water, such as forty grains of the citrate of iron and quinine dissolved in every gallon, should stimulate the appetite and help the digestive process.

C. E. C. Pneumo-mycosis, or aspergillus infection of the lungs, was the cause in the case of the two chicks examined post-mortem. It is unfortunate that you gave me such meagre information as to losses, system of management, etc., as I can only advise on general principles on methods of control. Isolate the affected flock, disinfect their quarters and equipment, and everything that they have come in contact with. Destroy the breeding grounds of the fungus by collecting and burning piece of decaying wood and sacking, damp and mouldy straw or sawdust, and keep the place swept clear of droppings. To strengthen the survivors and enable them to resist the disease, give them medicated water to drink for one month, prepared by dissolving forty grains of the citrate of iron and quinine in every gallon.

H. R. B. Pneumonia was the cause, due, I should judge, from chilling. Both lungs were solid, and the remainder of the organs congested. At the same time the crop was much distended with food and grass, and digestion appeared to be poor throughout the alimentary canal. Indigestion would not, of course, produce pneumonia, but would predispose by lowering vitality. I should advise being less generous with the lawn clippings, as they seem to be responsible for the digestive trouble.

A. E. H. Bacilliary White Diarrhoea was the cause in the case of the chicks. Treatment is very unsatisfactory, although chicks that remain free of the disease after the tenth day may survive, as each day increases their natural immunity. The question arises, however, whether it is advisable that there should be any survivors, as a certain percentage of them remain ' carriers," and so continue the disease in their offspring. The main thing now is to localise the trouble and prevent its spreading, either to other chicks or to future hatches. This can only be done by strict isolation of the infected birds and by the most painstaking care in the disinfection of all the equipment that they have come in contact with. The incubator, nurseries, brooders, houses, day-old chick boxes, and all utensils should be thoroughly cleaned and disinfected before further use. The litter and droppings should be swept up and burned, and the greatest care exercised not to carry infection to healthy birds by means of the hands, boots, cleaning tools, etc.

D. B. Internal haemorrhage was the cause. A small blood vessel had become ruptured in the uterus, when that organ became torn, probably by the straining efforts, while laying the egg. She was very fat, in fact much too fat for a layer, and this may have contributed to the evident difficulty she had in expelling the egg.

J. W. P. The post-mortem examination of the hen showed the following conditions. Every organ loaded with fat, and great masses of fat in the abdominal cavity. The great abdominal veins were distended with blood, and the vessels in the liver were in the same condition. The heart had stopped with the ventricles contracted and the auricles gorged with blood. There was congestion of the brain and spinal cord. There was no sign of actual disease in any of the organs. I am enumerating these findings, because you give me absolutely no history of the case, so I can only hazard the conclusion that death occurred suddenly, not from a true apoplexy, but from a sudden rise of blood pressure, or from shock, such as might be produced by fright or excitement.

NOTICE OF MEETING.

WORLD'S 3rd POULTRY CONGRESS.

By courtesy of the Ministry of Agriculture, a Committee Meeting will be held in the Conference Room at 10, Whitehall Place, Westminster, S.W.1, at 10.30 a.m. on Thursday, February 26th, 1925.

Business.—To dissolve the Old Committee.

On the same day and at the same place, at 11.30 a.m. an Open Meeting will be held in the large Conference Room (first floor).

Business.—To appoint a Preliminary Committee for a British Section of the International Congress taking place at Ottawa in 1927.

T. R. ROBINSON, Hon. Secretary.

Commercial Poultry Farming.

By **T. W. TOOVEY.**

This industry has not yet become one of the severely competitive industries, or this article would not be written. If it were like the flour milling industry, for instance, with its acute competition, acute beyond the conception of those not actually engaged in it, I should not feel inclined to lay bare any methods to my dearest friend that I thought I knew gave me the slightest advantage in competing with him for the limited demand that an excessive capacity to produce over requirements occasioned. As one of the old pioneers, I naturally feel a sympathy with young aspirants, who must be confused by the conflicting views and ideas put forward by the well-known names connected with the Poultry Industry. I am not concerned to deal with the fads and fancies promulgated by theorists in every poultry paper, but when men like Mr. Lester Spurgeon and Mr. Burn-Murdoch advance theories that either, I feel sure, or actually know to be incorrect, simply in the interests of those who have not yet sunk their capital in such developments, I feel constrained, very unwillingly, to say something.

Mr. Burn-Murdoch states that natural hatching and rearing spells bankruptcy for the commercial poultry farmer. I can only say I am not approaching bankruptcy yet; that I am laid out to rear 7,000 chickens to maturity this year, and that 2,000 chickens, February 11th, are now on the rearing grounds. The first lot will be housed this week; the hatching rate is round 75 per cent., and the death rate is 3 per cent., or about 60 to date. I consider natural hatching to be the safest, most reliable, and most economical method. That it has always been so, and always will be so, when the plant is properly designed for economy, and speed in working, and for hygiene. Although we have no incubators, or brooders on the premises, a good incubator may be run concurrently with the hens, as each hen will take 15 chickens in a properly-designed coop, and as a hen will not hatch 15 chickens on an average from 15 eggs, there is a surplus of mothers in a hen hatching plant that might be well supplied with incubator-hatched chickens if it is necessary to expedite matters.

It is not so here, as the hen-hatching and rearing plant is designed to take 500 eggs per week commencing with the first hatch due to hatch the first Monday after Christmas. Also I prefer to depend upon the hen to hatch, as a modern incubator seems to me a machine well designed to hatch more than we bargain for in the forms of B.W.D., etc., etc.

I am afraid that to deal fully with Mr. Lester Spurgeon's thesis would take more room that the Editor could afford, so I will commence by saying I profoundly disagree with him in most of the points he puts forward. As it is always pleasanter to agree than disagree with a well-known man, I will take the question first on which I agree.

I am in full accord with him when he says that commercial poultry farmer should confine himself t commercial poultry farming. He should not sell egg for sitting, day-old chickens, pullets or stock birds neither should he trap-nest, but depend upon those wh do, and goodness knows there are enough to choos from, judging from the numbers of advertisement that appear from pedigree breeders. When commercial poultry farming settles down on to standard lines I often wonder what the pedigree breeders in thei numbers will do; as with cross-bred poultry (all th largest farms will require) will be a few high-clas really reliable cockerels annually. Taking the othe points, I think Mr. Lester Spurgeon is entirely wrong notwithstanding what his American friends tell him in advocating the large flock of 1,000 head in thi country, that the White Leghorn is the ideal fowl that table poultry should be ignored, and that hatching and rearing is the nerve-straining, painful, and exacting procedure he makes it out to be; also tha hatching and rearing should not be concentrated in one or two months, but that it should be spread ove the first three months of the year at least, and that i circumstances allow in the shape of clean land, it may well be continued in August, omitting June and July and the autumn months. I would submit that th best fowl for the commercial poultry farmer is a cross bred fowl; that the most economical unit in which t keep them is the 100 bird unit, with four square fee of floor space per bird, on free range, at the rate o 250 to the acre on average land; that one poultry man can comfortably care for 1,600 on this system that the profits will be 1s. per head more on a singl unit of 100, than if the two units of 100 each were kept in one flock of 200.

If, however, the said poultryman has to rear his own replacements, I would reduce his flocks to 1 units of 100 each, and supply him with a suitable plant to turn out with hens the 400 pullets he would requir with cross-bred hens annually. When, however, th farm is large enough it is far better to keep the laying and rearing plants distinct each under their own managements. It is obvious I cannot go into details t substantiate all I have said; but, unlike Mr. Leste Spurgeon, I am doing it, also the same is being done on another farm close by, which I laid out; that th total number of birds affected is 10,000, that I hav full records and statistics spread over a number o years to support my contentions, and that the profits of this farm are yearly submitted to the Editor o "Eggs" confidentially, and also the profit of th smaller farm for the last year. (The first time proper balance sheet and trading account was available substantially agreed with mine).

The Editor in a footnote, may, if he thinks well say whether he thinks the said profits were satisfactory, taking into consideration that the smaller farm is not fully established yet, and also that on this farm an increase was made from 6,800 to 8,000 birds during the past autumn, and that the large increase had not time by Christmas to make due returns, and were only valued in the balance sheet at 4s. 6d. each.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

YEAR BOOKS.

THE COLUMBIAN WYANDOTTE.—The Secre-ary reports a slight decrease in members, which e attributes to unemployment. Many have romised to renew subscriptions when better times ome. Still there are 203 members, and the folowing comment is made: "Our policy has been o cross off members in arrears at the end of the ear, and in this respect we differ from other pecialist clubs."

Mr. Wace won in the section provided at the Harper-Adams' Laying Test; the winning pen howed an increase of 75 over the previous year, ut there was a regrettable fall-off in the size of ggs in the section.

There are several interesting articles in the book, nd one notes the remark of the judge at the Dairy how :—

> "One pullet I passed was decidedly nice, but on examination proved to have a very crooked breast bone. One man to whom I talked said that if a bird was good in all other ways, a crooked breast bone did not matter in the show pen. I cannot agree, as I consider crooked breast bones are a deformity."

I agree with Mr. Twist; but surely on this point here should be a definite ruling by the Poultry Club, and it should not be left to judges to do as hey like in such matters. If it is inherent, then here is weakness in the stock; if it is acquired, t should be penalised, as that is the breeder's ault. I am strongly of opinion that in the utility lasses at least birds with crooked breasts should be "passed."

THE BLACK LEGHORN.—The Secretary reports prosperous year, and claims that they are the hird strongest specialist club, with a membership ound about 400. He claims, too, that as the esult of the club's efforts, there is a distinct improvement in the type of Black Leghorn exhibited n the utility classes. He also makes a similar laim as to the Exhibition classes, stating that excessive head-gear and length of leg are doomed. Perhaps he is a little definite in his statements made after only two short years. We will hope he is right; and let us hope, too, that too much mportance will not be attached to the yellow leg n the utility classes, more especially for pullets—there must be some latitude allowed here.

The President views with alarm the great number of birds which have been shown and winning this season with white in tail. The standard permits judges to use their discretion in this matter. Well, I wonder how many cockerels which reach the shows with real yellow or orange legs have not had white in tail, if they don't show it there? Apparently the judging has not been altogether satisfactory, for Mr. Walter Hurst says that at two of the classics the standard was not complied with.

> "Due consideration being given from a utility point of view **only,** colour, size, comb, lobe, leg colour, receiving no consideration. . . . . . Very deplorable indeed was the mix-up at Olympia. It is to be hoped the governing body of the Club, in future, will select judges efficient in the art of selection for exhibition as well as utility classes."

Mr. Hurst's personal opinion is in favour of a five-pound pullet. It is a noble ambition, but somewhat difficult of attainment as far as the utility side is concerned—not impossible though. He contends that the pullets have been lacking in quality and character, too miniature in build, dull in colour, wanting in comb and lobe. That is severe criticism. Mr. Powell-Owen is pleased with progress made, and thinks that any drastic decisions would undo the good work already done, the club's policy being to get eggs and beauty, and it will have to decide which shall come first. Personally he is of opinion that eggs should come first, and then get the best breed points on top of that. Mr. Owen speaks of one man who was proud of the fact that, in the early days of the utility shows, he won with a bird in a Minorca class one day, and with the same bird in a Black Leghorn class soon after. We can only suppose that the judge had looked on the wine when it was red, but what a pity that bird was not entered in a Black Bresse class.

THE "POULTRYMAN."

The January issue is a very bright one, well illustrated, with photographs of those hard-working enthusiasts who are doing so much for the poultry industry North of the Tweed. There is an interesting article on "The Poultry Industry in Scotland," and a very full and well-illustrated description of the Scottish Laying Test. Mr. J. W. Moore writes on "The Large Unit System and Economy." His opinion is in favour of the smaller unit, and he says :—

> "We are told that the large unit system is more economical, even if the mortality rises as high as 20 per cent. Can such a rate of mortality be defended on the score of economy? The writer has very grave doubts. The weak point in his opinion is this: the conditions which kill off 20 per cent. of the chickens, even though we minimise the loss by terming them weaklings, must injuriously affect the others. If we admit this much, then that particular system stands self-condemned."

Mrs. Upjohn contributes "The Pros and Cons of Duck-keeping," "Hortus" "Pruning and After-Treatment of Neglected Fruit Trees." "The Bete-Noire of Poultry-keeping" is the title of an interesting article on Roup, while there are many other interesting and topical articles.

A LIVE SOCIETY.

On the 5th inst. I visited Wickford, and lectured to the local Society on "Chicken-Rearing." There was a very large attendance, the hall being crowded to its utmost capacity, and there was a perfect fusilade of questions after the lecture. They claim that Wickford is the most densely populated poultry area in the country. I cannot say as to that—probably our Lancashire friends would dispute it—but it is very possible there are more poultry-keepers to the acre than in any other part of the country; but not the head of stock. Thanks to a very capable Secretary (Mr. Garside) and an active committee, the society is doing excellent work. I am told that they have managed to secure as Presidents the two M.P.s for the district, and these gentleman are taking the greatest interest in the work. It is a good idea, and it was suggested to me, one that might well be followed by other societies in the country, as the more we are able to keep our Parliamentary representatives in touch with the industry, the more useful we shall find them when we want their assistance. On the 6th I visited East Grinstead, and lectured on the same subject there. While in the district I took the opportunity of going over Miss Maddison's farm at Dane Hill. One must congratulate her on the quality of her stock, particularly the Reds; I was really delighted to see such good colour and heavy production combined. I do not remember ever to have seen a flock of utility Reds with better colour. Light Sussex, too, were a very fine lot indeed. The farm is worked under difficulties; it is a very hilly district, and there is very little level ground, much of it is woodland; but the health of the stock was all that could be desired, and there was a fine lot of early chicks running about. Miss Maddison has also a nice lot of White Leghorns, and some Barnevelders; but I gather that the latter do not greatly appeal to her. The pen of Reds that won the S.P.B.A. Laying Test are still in existence, and looked remarkably well, for old hens the colour was excellent.

THE LIVERPOOL BRANCH OF S.P.B.A.

1924 ANNUAL REPORT.

Forty-six members have at various times taken advantage of the supply of foodstuffs from Messrs. B. Sykes and Sons, Ltd. There have practically been no complaints.

The total orders for foodstuffs for the twelve mont amounted to £1,247 1s. 1d. This gives an average £103 18s. 5d. per month.

The Winter Monthly Meetings have been mo successful, especially the attendance since t Northern Conference. The average attendance for t last four lectures was 62 members and friends.

In February Mr. Harold Gregson, of Bolton, ga a paper on "Intensive Poultry Keeping." In Octob Mr. Jack Wrennalls gave a paper on "Winter E Production." In November Mr. F. Walsh, The Gl Poultry Farm, Hoghton gave a paper on "Incub tion," and also judged a fine selection of eggs enter in the egg show. In December Mr. William Hamnet of Blackpool, gave a paper on "The £ s. d. of Poult Breeding," and also judged a fine selection of eg entered in the egg show.

The Northern Conference was held in the "Comm Hall" on 27th September. Mr. Tom Newman spo on the good work of the S.P.B.A., and also gave paper on "Some Everyday Questions." Mr. E. Meekings also gave a paper on "Planning a Poult Farm."

Egg Shows were held at the Lectures of Novemb and December.

The proposed Laying Test was abandoned throug lack of entries.

The Statement of Accounts presented show that t finances of the branch are in a most satisfactory co dition. On the year's working there is a balance £7 9s. 8d. This added to £21 18s. 2d., the balan brought forward from last year, gives a total £29 7s. 10d.

R. J. THOMAS, Hon. Sec.

9, Grey Road, Walton, Liverpool.

12 MONTHS ENDING 31st DECEMBER, 1924.

PROVISION ACCOUNT.

To—	£	s.	d.	By—	£
Purchases	1231	9	4	Sales	1247
Discount	15	11	9		
	£1247	1	1		£1247

INCOME ACCOUNT.

To—	£	s.	d.	By—	£
Postages, etc.	3	10	4	Subscriptions, 82 at 2/6	10
Stationery, etc.	1	15	0	Subscriptions, 7 at 1/3 ...	0
Hire of Hall	5	8	6	Donations	0
Lecturer's Fees and Expenses	7	17	0	Sale of Badge	0
Returned Entries: Laying Test	2	0	0	Entries, Laying Test ...	2
Prizes, Egg Show	1	10	0	Entries. Egg Show	1
Subscriptions Parent Society	8	12	6	Provision Account ...	15
Sundries	0	5	9	Subscriptions, Parent Society	8
Balance	7	9	8		
	£38	8	9		£38

BALANCE SHEET AS ON 31st DECEMBER, 1924.

	£	s.	d.		£
Suspense Account— 24 Subscriptions for 1925, at 2/6	3	0	0	National Provincial Bank, Ltd.	32
Income Account—					
Balance last account	21	18	2		
Balance this account	7	9	8		
	£32	7	10		£32

Bees.

By E. W. D. MADOC.

BEE STINGS.

Generally speaking, the keeping of bees results in their owner receiving a greater or lesser number of stings, but both the number and the severity of the stings may be reduced to a large extent by a little commonsense treatment of the subject.

In the first place, the bees should be of a reasonably gentle strain, and, secondly, they should be manipulated in such a way as to avoid arousing their anger. A warm sunny day, when honey is being gathered, is ideal for manipulation, and, when possible, all manipulation should be done under these conditions. Thundery weather makes bees very cross for some reason, even though the weather and nectar secretions are otherwise perfect.

In manipulating bees all movements should be slow and steady, avoiding all jerky rapid movements and jarring of the hive. Great care should be taken to avoid crushing any bees, as the strong odour given out by a crushed bee is objectionable to the other bees, and frequently makes them bad tempered; a stinging bee gives out a similar odour with similar results.

In all work with bees a good smoker should be used, especially by the beginner, before commencing operations on a hive. A puff or two of smoke should be driven in at the entrance and the hive left unopened for two or three minutes; during this interval the bees, frightened by the smoke, gorge themselves with honey, which puts them into a contented and peaceable state of mind. During the actual manipulation the smoker is used occasionally to keep them under control and to drive them from any particular part of the frame or hive as necessary. In this connection it is useful to know that while it is very easy to drive bees up a slope it is next to impossible to drive them down.

The bee-keeper with a little experience can easily tell the difference between an angry bee and one with peaceable intentions; the angry bee makes a peculiar high note with its wings when flying and comes at one in a business-like way. After the bee has settled it takes a fraction of time to secure a good grip with its feet before it is able to insert the sting; the sting is very thin, long and pointed, and has barbs on its sides, which prevent the bee from withdrawing it when once inserted deeply. When the sting is well home the muscles of the poison bag contract rhythmatically for perhaps half a minute, all the time driving in poison through the hollow tip of the sting. This action may be watched by pulling away the bee as soon as it has stung, when the sting with its white poison bag, and in some cases part of the intestines, will be left behind. Although the bee has been removed the action of the poison bag muscles continues, and the movement is quite distinctly noticeable. It will be readily understood that the severity of the stinging depends on the amount of poison injected, and as this is mainly a question of the time between the insertion of the sting and its removal, it is easy to see the extreme importance of removing the sting at the earliest possible moment; this is best done by a quick rubbing or brushing motion, which squashes the bee and removes the sting at the same time. It is essential to use a fair amount of pressure, otherwise the bee will be brushed off and the sting left in the wound. It is frequently possible by this means to prevent stinging altogether, by meshing and brushing the bee off during the fraction of time necessary for the bee to get a hold with its feet before inserting the sting.

What our Readers think of "Eggs."

T. Newman, Esq.

Dear Sir,—I beg to acknowledge with thanks your letter and cheque, £4 16s. 0d., of 24th inst., and I wish to express my appreciation of "Eggs" as an advertising medium and as a paper which helps the beginner on the road. Your deposit system also is fine. With kindest regards.

Yours faithfully,
(Capt.) F. ANDREW, M.S.P.B.A.

Menadews, St. Clements, Truro.

Dear Sir,—"Eggs" is packed full of information from cover to cover, and contains more practical information than any two contemporary journals.

Thanking you, yours faithfully,
(Signed) L. CHOAK.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

LIVERPOOL AND DISTRICT BRANCH.

At the Fifth Annual General Meeting of the above Branch, held in the "Common Hall," 3, Hackin's Hey, Liverpool. on Saturday, 17th January, 1925, at 7 p.m., the following officers were elected to hold office until 30th September, 1925:—President: Mrs Hodgins. Vice-President: Mrs. Kendall. Hon. Sec. and Treas.: Mr. R. J. Thomas. Committee: Messrs. R. A. Currie, B. O. Crosthwaite, J. H. Clansey, J. A. Callard, Rd. Handley, M. Robertson, and Robt. E. Wilson. Auditors: Dr. J. P. Hall and Mr. P. W. Rowley.

CHANGE OF ADDRESS.

We are asked to notify members and readers that Mr. L. Mc. L. Wheeler has removed from Victoria House, Clovelly Road, Bideford, Devon, to The Croft Poultry Farm, East-the-Water, Bideford.

Correspondence.

COST OF PULLETS.

To the Editor of "Eggs."

Dear Sir,—I have been greatly interested in the correspondence on the cost of pullets. I have been trying to work out how many eggs a pullet should lay by the time she is 18 months old to pay for herself. I have ignored the cockerels. Expenses are based as follows :—

		s.	d.
Cost of chick to time of hatching, including cost of egg, incubating, 20 per cent. infertiles, etc.			6
Food at present prices, bought in small quantities, 78 weeks at 3d. a week ...		19	6
Labour on basis that it requires £100 of labour to look after 1,000 birds a year —i.e., 2s. a bird a year		3	0
Upkeep.—Litter, disinfectants, extermination of vermin (pigs kept on the next farm), repairs insurance, depreciation, rent of land, 5 per cent. interest on capital		2	0
Making total cost per bird for 18 months	£1	5	0

Average price of eggs, not the mean of year's prices, because birds do lay more when eggs are cheap, but to taking the total number of eggs laid in a year by a number of birds, and price one obtains for them, it comes to, roughly, 2s. a dozen after expenses have been paid.

This works out that a hen should lay 150 eggs in her first 18 months before she pays for herself—i.e., before any profit is shown.

You will observe I have made no allowance for deaths.

Ducks.—I put cost of food 5 per cent. higher, price of eggs 5 per cent. lower, so a duck should lay 165 eggs in her first 18 months to pay for herself, but she should have no difficulty in doing this, as I have a Buff Orpington duck not, I believe supposed to be the best laying breed, which laid 184 eggs within 366 days of her being hatched. Further, I believe a duck's profitable laying existence is longer than that of a hen.

Prices have been based on what I have actually to pay, and receive in the country where transport is expensive and market facilities not of the best.

Yours truly,
W. O. G. COCHRAINE.

COST OF PULLETS.

To the Editor of "Eggs."

Dear Sir,—In reply to Mr. Burn-Murdoch's interesting and constructive criticism of my figures re cost of a pullet, I should like to point out : First, that Mr. Toovey uses only broody hens, and I have not yet heard that he is bankrupt ; and second, how Mr. Burn-Murdoch makes poultry pay if it costs him 10s. to produce everyone of his pullets. Does this figure refer to commercial stock or to pedigree breeding stock? My figure referred to the production of pullets for the ordinary poultry farm, which relies solely on table eggs for its existence. Of course, to produce pullets for breeding pens is far more expensive owing to drastic culling and selection, and trapnesting of parent stock. Thus the cost of the hatching eggs and the cost of the pullet are both increased. On the other side there is an increased return in the sale of stock cockerels, and later of sittings.

The cost of hatching eggs to the commercial poultry farmer will probably not exceed £5 per 100 even if he buys them, while the majority do not cull their laying flocks as closely as they ought. In any case, he cannot, I am sure, afford to pay as much as 10s. for his pullets.

A question such as this usually ends in a battle of opinions. There is, however, one means of obtaining reliable figures, and that is, whenever experiments such as those at Wellingham are carried out, the financial aspect as well as the scientific should be considered. Not only feeding costs, but all the other details of costs should be included in the final report. Such figures, having official backing, would prove most useful.

Certain of my experimental work this year will be carried out on a number of chicks, incubator hatched and reared in brooders. As usual, full financial data will be kept, and it will be interesting to see how the cost of artificial rearing compares with the natural method.

I must apologise, Mr. Editor, for taking up so much space, but it does seem to me that more use could be made of the S.P.B.A. experiments to make them not only of value scientifically, but also as a basis for such figures as "cost of producing a pullet."

Yours faithfully,
J. E. V. TYZACK.

To the Editor of "Eggs."

Dear Sir,—Your correspondent, "Observer," in last week's issue of "Eggs," says : "I think I am right in saying that a thoroughly reliable pullet can be bought at seven or eight weeks old for six shillings. . . ." If this is correct, then presumably the people breeding these "thoroughly reliable" pullets can do so at a cost, covering everything, of say five shillings. Then why cannot the Commercial egg farmer? I am sure many of your readers would be grateful if "Observer" would tell them how these birds are bred.

At the end of Mr. Burn-Murdoch's interesting etter he raises the question of Interest on Capital. Surely this is represented by the net profits (if any) of the farm. If one invests one's money in any business, the profits of that business, when divided up, represent the interest paid on one's capital.

Yours faithfully,
PHILIP S. N. WHITLOW.

LEG WEAKNESS AND CHICK-REARING.

To the Editor of "Eggs."

Dear Sir,—With regard to your remarks on Vitamin "A" and Leg Weakness in your issue of January 28th, many of your readers have been under the mistaken impression that I am the Mr. Salter referred to as your correspondent on the subject. This being so, will you very kindly allow me a small space for the expression of a few of my views on chick-rearing?

After rearing chickens for fifteen years—we now rear about 5,000 a year—my personal opinion is that the old-fashioned explanation of leg weakness s usually the correct one—that contact with the earth is the real preventative. The worst attack of leg weakness I had among chicks occurred a few years ago with two or three hundred chicks reared with hens in the autumn. This was due to the coops having wooden floors, and to the fact that in this particular kind of coop I had a food trough nside.

The way we rear chicks here is by means of very powerful anthracite stoves—the 500 chicks round then take up their position about four feet away. Earth is put in the brooder house to the depth of two inches and covered with chaff. The earth is well dried before using and kept dry for he first week; after this it is watered daily, two gallons each night being sprayed round. I may say here, that since we have watered the earth round the stove, **after the first week**—never beore—toe-pecking is unknown.

We feed the chicks on chick feed and on very appetising puddings. These puddings were based on the formula given by Mr. G. A. Palmer; I have used them for years and want nothing better for chick-rearing. Herein, I think, is the secret of he fact that the chicks in our brooder houses never go down with leg weakness, although we rear arge numbers here before Christmas. The chicks get to know that they will not get the pudding unless they go out into the grass run for it, and by keeping them slightly hungry for the pudding hey spend practically all their time after they are a few days old outside the brooder house. The pudding we use here is as follows:—Wheat 3 parts, oatmeal 3 parts, rice 2 parts, linseed 1 part. This is cooked in shallow pans in skim milk till thoroughly swollen, and then dried off with fine middlings. I cannot help thinking that a great many people are troubled with leg weakness through feeding dry mash inside the houses. I am confident that if they used the puddings fed in the runs, at least early in the season, they would have no further trouble with leg weakness. The moist earth in the brooder houses will help also. We have now by the end of January about two thousand chicks out, some of which were hatched in November, and they have progressed amazingly.

I have at different times tried feeding chicks on the dry mash system, but I have found the puddings take no more time to prepare and feed than to keep dry mash hoppers clean and filled.

I should like to add that, in my opinion, it would be fatal to moisten the earth in the brooder house before the chicks are a week old; probably the chicks would contract pneumonia. We are careful to dry the earth thoroughly before the chicks are put out from the incubators.

I respectfully submit that a commonsense system as outlined above, and one which has been proved by years of practical experience of early rearing, is worth more than all the theories that the general run of leg weakness is due to too much top heat on the spine, lack of bottom ventilation and lack of vitamines. By this I do not mean that such lines of investigation are not of great value experimentally, but it seems to me that too many rearers of chicks suffer great losses during the early parts of the season through leg weakness when a practical system which involves getting the chicks on to the bare earth is their real remedy.

Yours faithfully,
E. A. SALTER.
Kidlington, Oxon.

EAST GRINSTEAD POULTRY ASSOCIATION.

The members of the East Grinstead Poultry Association spent a very enjoyable evening on 6th Feb., when Mr. Tom Newman gave the second of his lectures at the Institute.

The subject was "Chicken Rearing," and the lecturer especially emphasised the necessity of protecting young chicks from chill, the care needed in feeding during first few days, and the advisability of giving milk in some form, and using only foods of the best quality.

A good deal of discussion followed, and the meeting closed with a hearty vote of thanks, proposed by the Chairman, Mr. E. W. Pye.

The Association has only recently been formed, and Mr. Newman's visits have been the greatest help in arousing interest among the members.

F. M. LAMBOURN, Hon. Sec.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

KEIGHLEY AND DISTRICT BRANCH.

A whist drive will be held in the Temperance Hall, Keighley, on February 18th. Will members please support the efforts of the Committee to clear off the debt incurred by the holding of the first annual show. The drive commences at 7.30 p.m., in the Lower Hall.

The Proprietors of "Poultry News" are giving a series of Free Lectures to Poultry Societies making application. The Keighley and District Branch have secured the services of Mr. Bruce Wilcock (the Editor of "Poultry News"). Under this scheme Mr. Wilcock will visit Keighley, and lecture at the Temperance Hall on Wednesday, February 25th, at 7.45 p.m. His subject will be "The Elusive Winter Egg and How to Obtain It." Questions will be answered on any subject relative to poultry culture. Everyone interested is invited to attend.

The Second Annual General Meeting will be held in the Temperance Hall, Keighley, on Wednesday, March 4th, 1925. The President, Mr. Frank Snowden, wishes to stress the importance of this meeting, and wishes a good attendance. Members wishing to have any resolution placed on the agenda please notify the Secretary before March 1st.

(Mrs.) A. WILSON, Hon. Sec.
Minorca Farm, Denholme, Bradford.

APPLICANTS FOR MEMBERSHIP.

Houlton, S. J., Barrington, Hall Green, Malvern.
Robarts, T. W., "Oaklands," Church Road, Catsfield, nr. Battle.
Murphy, J. F., Beck Isle, Pickering.
Mackintosh, W., Pinkie Farm, Newmachar, Aberdeenshire.
Hunter, Miss Lily, Valley Farm, Worlingworth, Framlingham, Suffolk.
Davy, A. J., Harwich Road, Bradfield, Manningtree.
Scholes, Edmund, Co-operative P. Prod., Ltd., Virginia Water, Surrey.
McKenzie, Rbt. Morrison, Culross, Dunfermline.
Cook, T. C., Gweedore, Bicknacre, Essex.
Hargreaves, J., Welltown Manor, Boscastle, Cornwall.
Mathers, Harold, Lidget P. Farm, Skelmanthorpe, near Huddersfield.
Wake, D., Ruckman's Cottage, Oakwood Hill, near Dorking.
Rodgus, Joshua, 9, Hulton Lane, Deane, Bolton.
Massey, Jas., 51, Chip Hill Road, Deane, Bolton.
Grubb, Mrs. R., Cove Court, Farnboro', Hants.
Bullin, Jas. L., School House, Gedney Drove House, Wisbech.
Davies, M. J., Park Cottage, near Mount Ifield, near Crawley.
Ingram, Geo. E., Richmond Hotel, Richmond Hill, Braddon, I.O.M.
Harris, A., 37, Milton Road, Widnes, Lancs.
Lythgoe, Jas. (Junr.), Morley's Hall, Astley, near Manchester.
Wakelin, G. E., 64, Redcliffe Road, Mansfield, Notts.
Sayers, Mrs. G. M., Sparham Hall, Norwich.
Arch, Mrs. S. G., Kew Cottage, Mount Bridge, Boston, Lincs.
Upirchard, Miss K., Oaklands, Kingsdown, near Sevenoaks.
Parsons, Mrs. W. J., Algiston, Berwick, Sussex.
Standbridge, Lt.-Col. W. J., White Cottage, Winterslow, Wilts.
Lolly, Gerard, M., Cordwalles, Camberley.
Batty, Lawrence B., Newton Grange, Tissington, Ashbourne, Derbyshire.
Brambell, L. F. (Junr.), Knockeoder, Herbert Road, Bray, Ireland.

EGG-LAYING COMPETITION.

The egg-laying test organised by the Barrow and Distr Utility Poultry Society has just completed the fourth period four weeks. The test is under the management of Mr. G. Tootall, at Thorncliffe Poultry Farm, who reports an increase 81 in output of eggs over last month. There are still three bi to lay their first egg, though possibly one is laying on the flo Birds Nos. 20 and 36 have been suffering from cramp, but almost right now, and No. 56 has been treated for cold in eye. The feeding is unaltered from last month, and with exception of the three birds mentioned all are in good heal Records for sixteen weeks:—

Open Class, Section 1.—1, Charles Atkinson, 642 pts., Wh Wyandotte; 2, Hon. M. Cross, 634, White Wyandotte; 3, Willi Hatton, 602, White Wyandotte.

Monthly Certificate.—1, Hon. M. Cross, 180 pts., White Wy dotte.

Small Breeders.—1, George Waite, 506 pts.. White Wyandott

Monthly Certificate.—1, George Waite, 48 pts., White Wy dottes.

Section 2. Open Class.—1, J. Tyldesley, 696 pts., White L horns; 2, William Hatton, 556, White Leghorn; 3, T. H. Bar and Son, 496, White Leghorns.

Monthly Certificate.—1, J. Tyldesley, 188, White Leghorn.

Small Breeders. Open Class.—1, J. J. Hardy, 436.

Monthly Certificate.—1, Robert Atkinson, 110 pts.

Section 3. Any Other Variety, Heavy Breed.—1, Hon. M. Cr 752 pts., Light Sussex; 2, T. H. Barker and Son, 606, Buff Roc 3, C. E. Duff, 550, R.I.R.

Monthly Certificate.—1, George Mills, 190 pts., R.I.R.

Small Breeders.—1, Robert Atkinson, 448 pts., R.I.R.

Section 4. Any Other Variety, Light Breed, Open Class.- Hon. M. Cross, 530 pts., Ancona; 2 and 3, Myles Newton, 458 a 438, Black Leghorns.

Monthly Certificate.—1, Hon. M. Cross, 150 pts., Ancona.

Monthly Certificate.—P. W. Davies, 110 pts.

J. GRAHAM, Secretary.

10, Romney Road, Barrow.

TESTIMONIALS.

Ladyfield, Invergowrie.

Dear Sirs,—I have your letter reminding members of clos of financial year, also requesting support for N.P.C. Theref please find enclosed P.O. 10s. 6d.—5s. subscription to S.P.B. and 5s. 6d. for N.P.C., or to be divided as you think fitti Trusting your request meets with success well earned. Wo cannot express my appreciation of your paper and work of Society in general.

Yours faithfully,
(Signed) D. PETRIE

18, Casson Street, Milnsbridge,
Near Huddersfield.

Dear Mr. Newman,—I should like to express my appreciat of "Eggs," and thank you for information I have gai through its columns. I began reading it about eighteen mon ago, and have reared all my this year's stock on your formu and this November I have had more eggs in one day tha had all the month last year out of the same number of pullets.

Yours sincerely,
(Signed) G. CHADWICK

The Lodge, Copsewood Grange, Stoke, Coventry.

Dear Sir,—I would like to say how much I appreciate y helpful paper, which I have taken up again recently (about months). I may say I have just started poultry as a busin proposition in the nature of a side line to gardening, a owing to pressure of work, cannot give the time to it which deserves. However, so far, results are very gratifying, tha to "Eggs."

I remain, yours faithfully,
(Signed) F. JESSUP

"Ashmead," Garstang, near Preston.

Dear Sir,—I would like to add my appreciation of y efforts in making "Eggs" so useful and interesting to poul keepers. I look forward each week to receiving my copy, am always sure to find something new and helpful to me. have long ago ceased to take other poultry papers, as I that the help one gets from "Eggs" is far more reliable. wish you, "Eggs" and the S.P.B.A., a very prosperous Year.

Yours sincerely,
(Signed) W. R. LORD.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, 13th FEBRUARY, 1925.

GRAIN AND FEEDING STUFFS.—Fair quantities of English heat are on offer and in moderate request at slightly lower rices, except at Liverpool, where a better demand is reported nd quotations have advanced. The average price for good milling samples at the four markets quoted is again 14s. 2d. per cwt. nported wheat is in slow demand and sells at less money, No. 2 ard Winter at London making 16s. 11d. per cwt. as against s. 6d. a week ago. Feeding barley makes about late rates, but t Bristol imported descriptions are in little demand and slightly ieaper. Trade for oats records little alteration, and quotations re practically unchanged on the week. Maize is in fair supply nd is slightly reduced in price.

Recent quotations for millers' offals are mostly unchanged, ith the exception of coarse middlings, which are slightly ieaper. Meals record no great alteration in price, and most ianges are in buyers' favour. Oil cakes continue in slow de-and, and prices on the whole have an easier tendency, but ; London linseed cake is 2s. 6d. per ton dearer.

MILLERS' OFFALS.—Bran (British): Bristol, £9 7s; Hull, 8 17s; Liverpool, £9; London, £8 15s. Broad Bran: Hull, £10 7s; ondon, £10. Middlings—Fine (Imported): London, £10 15s; Coarse 3ritish): Bristol, £10 7s; Hull, £9 15s; Liverpool, £9 5s; London, 9 2s. Pollards (Imported): Bristol, £8 10s; Hull, £8 10s; Liverpool, £7 17s; London, £8 15s. Rice Bran: Bristol, £9 15s; Liverpool, 9 2s. MEAL.—Barley Meal: Bristol, £13 2s; Hull, £12 17s; Lonon, £13 10s. Maize Meal: Bristol, £13; Hull, £12 7s; Liverpool, 12 5s; London, £11 12s. Maize Meal (S. African): Hull, £11; iverpool, £11 10s. Maize Germ Meal: Bristol, £12; Hull, £11 10s; ondon, £10 12s. Maize Gluten Feed: Bristol, £12 5s; London, 10 15s. Locust Bean Meal: Bristol, £9 10s; Hull, £9 10s; Liverpool, £10; London, £9 15s. Bean Meal: Bristol, £14; Hull, £13 8s; ondon, £13 15s. Fish Meal: Bristol, £21; Hull, £20; Liverpool, 19 10s; London, £21.

EGGS AND DEAD POULTRY.

A quiet trade rules for eggs, and, with increasing supplies at ie markets, lower quotations are recorded for both English and ish. Imported eggs are plentiful and easier. Dead poultry periences a moderate inquiry, and fowls are inclined to be a tle dearer on the week. English supplies are rather short, it the deficiency has been fully made up by offerings of iported.

Week-end Prices—Eggs (per 120): British, 21s 0d, 19s 9d; Irish, s 3d, 18s 9d; Danish, 20s 7d, 19s 6d; Dutch, 20s 7d, 19s 3d; Chinese, s 6d, 10s 6d; Italian, 17s 0d, 15s 0d; Egyptian, 9s 6d, 9s 0d; oroccan, 11s 6d, 10s 0d; Styrian, 15s 6d, 14s 0d.

Dead Poultry (per lb.): Fowls—Surrey, 1s 11d, 1s 8d; Irish, 8d, 1s 5d; Others, 1s 5d, 1s 2d. Ducks, 1s 8d, 1s 2d. Geese, 4d, 1s 0d.

EGGS.

Per Doz.—Ashford: First, 2s 0d; Second, 1s 10d. Birmingham: rst, 2s 6d; Second, 2s 3½d. Bridgwater: First, 2s 0d; Second, 10½d. Carlisle: First, 2s 3d; Second, 2s 0d. Chelmsford: First, 0d; Second, 1s 10¾d. Derby: First, 2s 5d. Dorchester: First, 9½d. Exeter: First, 2s 3d. Hereford: First, 1s 9d. Ipswich: rst, 2s 3d; Second, 1s 9d. King's Lynn: First, 2s 3d; Second, 0d. Lincoln: First, 2s 6d. Llandilo: First, 2s 0d; Second, 1s 9d. old: First, 2s 4d; Second, 2s 3d. Montgomery: First, 2s 0d. ewport (Mon.): First, 2s 3d; Second, 2s 0d. Norwich: First, 3d; Second, 2s 0d. Oswestry: First, 2s 2d; Second, 2s 0d. enzance: First, 1s 7d; Second, 1s 6d. St. Ives (Hunts): First, 11½d; Second, 1s 10½d. Salisbury: First, 1s 10½d; Second, 1s 10d. irewsbury: First, 2s 4d; Second, 2s 2d. Skipton: First, 2s 6d. uro: First, 1s 8d. York: First, 2s 7d; Second, 2s 6d.

FOWLS.

Per lb.—Birmingham: First, 1s 5d; Second, 10d. Derby: First, s 6d; Second, *3s 0d. Exeter: First, 1s 6d. Hereford: First, 1s 4d. swich: First, 1s 6d. Lincoln: First, *5s 6d; Second, *4s 0d. andilo: First, 1s 7d; Second, 1s 4d. Newport (Mon.): First, 8d; Second, 1s 4d. Shrewsbury: First, 1s 5d; Second, 1s 3d. ipton: First, 1s 6d; Second, 1s 4d. Truro: First, 1s 5d. York: rst, *6s 0d; Second, *5s 0d.

DUCKS.

Per lb.—Birmingham: First, 9d; Second, 8d. Exeter: First, 6d. Hereford: First, 1s 4d. Ipswich: First, 1s 6d. Llandilo: rst, 1s 7d; Second, 1s 4d. Newport (Mon.): First, 1s 6d.

*Per Head.

“Eggs.”

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, February 18th, 1925.

CONTENTS.

EDITORIAL 109
NORTHERN U.P.S. LAYING COMPETITION 110
MODERN POULTRY FEEDING 111
LAINDON LAYING TEST 112
S. IRELAND LAYING TRIALS 112
ANSWERS TO QUERIES 113
POST-MORTEMS 114
COMMERCIAL POULTRY FARMING 116
S.P.B.A. 117, 119, 122
BEES 119
CORRESPONDENCE 120
E. GRINSTEAD POULTRY ASSOCIATION 121
BARROW AND DISTRICT EGG LAYING TEST ... 122
MARKET REPORT 123

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of “Eggs” to their poultry-keeping friends.

Subscription to “EGGS,” 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, “Eggs,” 94, Farncombe Street, London, S.E.16. Telephone HOP 894.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of “Eggs,” it is imperative that new advertisements and alterations are received by **FIRST POST ON FRIDAY MORNING** to ensure insertion in the following Wednesday's issue.. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

SPECIAL NOTICE.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS, per line, extra 9d.
DAY-OLD CHICKS, ,, ,, 1s.
DAY-OLD CHICKS ,, ,, 1/6

The number of letters, punctuations and spaces between words should be totalled, when the folowing table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1 6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount. will not be inserted.

Advertisement must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office
FIRST POST FRIDAYS
for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY. AND TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS, for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent, and six penny stamps extra to cover cost of acknowledgment of same.

EGGS.

FOR SALE.

White Leghorn Eggs; 7s. 6d. per 15, N.R. Every bird trap-nested. Also White Wyandottes and Rhode Island Reds—G. B. Tootall, M.S.P.B.A., Thorncliffe Poultry Farm, Barrow-in-Furness.

LIGHT SUSSEX AND R.I.R. EGGS.
From trap-nested parents; 12s. 6d. and 8s. 6d. doz. Catalogue.—Beard, Bleasby, Notts.

WHITE WYANDOTTES.
Trap-nested. Large eggs.
7s. 6d. DOZEN, 55s., 100.
—Brett, Hangerlea, Bishop's Stortford.

Starved to death with a full crop

GROW your chicks quickly, then the bleak and changeable weather will not "get them" and they will not die.

Make sure that every particle of required nourishment is given to the chicks in such a way that at no moment of the day are they deprived of quick growth-making and heat-providing food, or kept hungry in the cold.

Feeds must be easily assimilated and guaranteed "balanced" so that the chicks cannot overeat.

Thousands of chicks die of starvation every year with full crops, because their feed is unbalanced and contains a lot of fibrous matter that cannot be digested quickly enough or turned into growth.

Ful-O-Pep Growing Mash is guaranteed; it is composed of only just those feed elements actually required for amazing growth.

Your chicks may not consume so much Ful-O-Pep Growing Mash as other Mashes but they will grow nearly twice as quickly because they do not have to waste a lot of energy grinding up something not actually required in order to get the vital elements. Chicks don't die the Ful-O-Pep way.

That is why it pays to feed the finely ground, easily digested, perfectly balanced Ful-O-Pep Growing Mash.

FUL-O-PEP TRADE MARK
GROWING MASH

NO MIXING : NO HEATING WATER : NO TROUBLE

Write for the revised edition of the Ful-O-Pep Handy Monthly Guide—the most valuable book on Incubation, Rearing and Poultry Husbandry. This book has detailed suggestions for every month in the year. Also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Made and Guaranteed by
QUAKER OATS LTD.. 11, Finsbury Square, E.C.2.

EGGS.

FOR SALE.

Prize Pen Barnevelders, White Wya dottes, White Leghorns, Fawn and Whi Runner Ducks, Black Runner Ducks. the best laying strains procurable. A f sittings can now be booked. Correspo dence invited. — A. Hudson, The Fla Kirkby-Thore-by-Penrith, Cumberland.

Prolific Large Strain of Light Susse White Wyandotte and White Leghor reared at high elevation; 8s. for 15, u fertiles not replaced.—S. Hartley, Watki son Hall Farm, Illingworth, Halifax, York

Buff Rock Eggs (pen sired by cocker from Mrs. Drew), 8s. dozen, C.P. — Denness, Oak Tree Farm, Holme, York.

Eggs now ready, from three pens, priz winning Light Sussex, both utility and e hibition, reliable, hardy stock, and ma winners were hatched from eggs suppli by me last year; 10s. per dozen; unfertil replaced.—Hy. Weir, Errwood, Buxton.

Rhode Island Red (Crowley); 5s. doze carriage extra. Dalgliesh, Headley, Bo don, Hants.

R.I.R. Eggs from selected pen; good la ing strain; 5s. dozen; incubator orders su plied.—Joseph Alty, Sandy Lane. Mawdesle

White Wyandotte Eggs, 2¼ozs., 6s. p doz.; 45s., 100. Cam's Extra Special Pens and II. Mating. Particulars on applic tion.—Miss F. Tinkler, late Caunton Vica age, Newark.

Light Sussex Eggs, Lister's strain; 6s. 6 dozen.—Morris, Gate Farm, Battle.

HEMUS and SON.
1,000 Large Fertile Eggs weekly fro second season hens, all bred from Nation Laying Test blood. W. Wyandottes, Leghorns, Rhodes; 5s. 6d., 15; 35s., 1 Barnevelders, 10s., 15. Buff Rocks, 7s. 6 15; 50s., 100. Turkey Eggs (Bronze), 2s. 6 each, from 150-egg hens.—Shirley Far Warwickshire.

RHODE ISLAND REDS.
Not the best, but good enough. Bouche Golden strain; 5s. dozen, post paid. Sat faction guaranteed. Hen Eggs only fro picked layers.—Adcock, Cymryd Poult Farm, Conway.

R. HOLLAND,
Biddenham, Bedford. Reds, W. Leghorn L. Sussex. Eggs, 8s. 6d. per 15.
FREE.
One dozen Eggs, as ordered, to first ord opened on Friday mornings.

ROWLAND COOKE, M.S.P.B.A., N.U.P.S.,
Offers White Leghorn Eggs from h famous Pen 26, National Laying Test wi ners, 1923, and from life-recorded dam sired by proved L2 cocks. Prices from 4 per 100; trap-nested hens only. Catalog free. Also Black Leghorns, Rhode Isla Reds, Anconas. Approved Breeding Stati by Ministry of Agriculture. — Keldholn Poultry Farm, Kirby Moorside, York.

PHILIP CLAPHAM.
Specialist Breeder of Utility White Wya dottes. Over 200 Pullets trap-nested. Aga standing second, Gloucester Trials. Silv Medal last year. Hatching Eggs at mo moderate prices ready. Catalogue free receipt of your post card.—Sherriff's Far Lyonshall, Herefordshire.

ALEX. J. BELL, M.S.P.B.A., U.D.
Longwick, Princes Risborough, Buck offers from his Pedigree Pens of R. Reds: White Leghorns, Indian Runne and Khaki-Campbell Ducks. Also Lig Sussex x R.I. Reds. Sittings (15 egg N.R.) from 10s. 6d. to 21s.; carriage pa Chicks double. List free. Satisfaction i sisted on.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, FEBRUARY 25th, 1925.

Editorial.

' THE SIMPLEST METHOD OF SECURING A LIVING FROM HENS."

The above is the title of an article recently con- ibuted to these columns by Mr. Lester Spurgeon. any readers have asked us to express an opinion in e hope that it will lead to a discussion which may rhaps prove not altogether barren of results. What llows is not intended as criticism.

Simplicity appeals to us, more particularly in respect systems. One can admire it sometimes as a charac- ristic of humanity, although it becomes a little tiring ıen one receives a letter couched in these terms:—

> "One of my hens was found dead under the perch this morning. Please state cause of death, and best means to take to prevent a similar happening."

The simple explanation here is the most satisfactory: Heart failure " as the cause, and a statement to the ect that no means of prevention have as yet been covered, is gratefully accepted as an answer to is question, which arrives at least a dozen times a ar.

Mr. Spurgeon says:—"Very few novices can be ıde to realise that the simplification of this physi- lly-tiring work pays in the long run."

That is all right in itself, but as far as we can see, . Spurgeon's proposals for simplifying the work ıount only to confining it to egg farming, cutting out other side issues, such as selling sitting eggs, day- l chicks, three months old pullets, etc., running the ds in as large flocks as possible, and hatching only ring the months of March and April. Speaking for nself, he would house in units of 1,000, because the ıvenience of being able to go into a house holding 00 head of stock, that could be attended to without ng outside, appeals to him; at the same time he vises the novice not to run the risk, unless he is ssed with a very keen sense of observation.

It is strange how two different minds will view this estion in totally different ways. Our friend's ideas not in the least commend themselves to us, and if will forgive our saying so, there is just a suspicion t he has subordinated the economic side—to con- ıience.

t will perhaps be wiser if we confine ourselves irely to his suggestion that all side issues should be out, and limit the discussion to his views on egg ming.

In the first place, we will deal with the limitation of hatching to the months of March and April. We can hardly see what advantage is to be derived from hatching in March. Leghorn pullets hatched in this month will generally lay in early September, and are very likely to moult in late October or early November, while a January hatched pullet will start in June or July, and after helping to fill the egg basket at a time when eggs are needed and are fairly profitable, will drop into a moult about the same time as her March hatched sister.

Many of our readers have written to say that they have found the January hatched Leghorn a most profitable bird. We can only conclude that Mr. Spurgeon's desire is to limit his hatching to as short a period as possible, and recognising that it could not all be done in April, he includes March. But undoubtedly the crux of his proposals is the 1,000 hen unit. Here we are going over the old ground again of large versus small units.

It is idle to contend that the 1,000 unit cannot be run successfully, because we know that it can be. We also know that the smaller unit can be run quite as successfully, and on a properly-planned farm there is no doubt that the extra cost of labour is insignificant; while even the most enthusiastic advocates of the large unit must admit that the risk involved is considerably greater, not only from disease, but also from the percentage of unprofitable birds that are likely to be carried. Mr. Spurgeon advises the novice not to start with the large unit unless he is posssessed of very keen powers of observation. Thus he admits the risk, and we suggest that even the most experienced man will need all his powers of observation if he is to run a 1,000 unit year in and year out, without a rude realisation of the risk in the course of time. Any serious outbreak of disease would involve consequences which one hardly cares to contemplate. With the small unit, and it will probably be found the 100 size is the most economical, there is far better control, the risk of carrying duds is greatly minimised, and an outbreak of disease may be isolated and effectively dealt with. All these arguments have been advanced many times before, and we do not get nearer to a solution. It is hardly a question as to whether the large or the small unit can be run profitably or not, but rather one as to which is the *most* profitable. Mr. Toovey, who writes from long experience, expresses his opinion definitely in favour of the small, and his opinion is certainly entitled to respect, as he is farming purely for the commercial egg, and has some 8,000 head of stock. He contemplates, we understand, turning his attention to the production of table poultry as well, so that his opinions do not coincide with those of Mr. Spurgeon. So far

(Continued at Foot of Column on Next Page).

Modern Poultry Feeding.

By **TOM NEWMAN.**

THE ROWETT EXPERIMENTS—MINERAL REQUIREMENTS.

Extremely interesting are the results published in the preliminary communication of the experiments carried out at the Rowett Institute and other stations, under the guidance of Dr. Orr and Dr. Scott Robertson. The remark that "unfortunately our knowledge of the mineral requirements of poultry is very limited" is so perfectly true, that one feels much indebted to those engaged in these experiments for the valuable work they are doing.

I think one may say fairly definitely that the average ration of the fowl is not deficient in its mineral content, except in respect to the calcium salts, and perhaps, in some cases, in iron. The practice of the poultry-keeper has always been to feed wheat and other cereal offals, also the whole grain, and to supplement this with animal protein and green food in some form or other, so that it is rather difficult to see where the deficiency is likely to arise except in respect to the lime salts. Whether it is balanced or not is another matter.

I have thought for some years that a deficiency of the calcium salts is responsible to a greater extent than anything else for the unhatchable egg, and it probably explains more than anything else why the eggs of some of our highest recordi
hens are so difficult to hatch, just as it expla
why there is so often this tendency to soft bone
the progeny.

What I think is of the utmost importance for
to recognise is that the mineral requirements
to a great extent governed by the bird's producti
We cannot, for example, put on a par the pu
which begins laying at five months old, and
sister who starts at nine months. If there is a
ficiency of lime in the ration of the former,
she continues to lay eggs at a fairly fast rate,
will not only not make bone, but she is likely
actually draw upon her skeleton for lime. No
when you have such birds as these running free
good pasture, it is possible that they can sup
all their needs, but when they are running at
rate of 400 to the half acre for six months of
year, it is perfectly certain they cannot.

There is again, too, the forcing of young pull
by placing them under artificial light, or even
a forcing ration. In such a case as this it is sur
necessary to supplement the mineral content
the ration; that the birds' bodily reserves are
heavily drawn on is evidenced by the fact that,
breeders even in their second year, they ha
proved inferior to birds which have not been un
light.

There is one other aspect of the question wh
should prove of interest. We have had a m
interesting paper on "Nutritional Roup," by
Breach. This has been attributed to a deficien
of the vitamin "A." It would be of great inter
to know whether such a condition could arise fr
a deficiency in the mineral content of the ration

Our chief concern, however, lies with our hea
producers, for therein lies our weakness, and
fortunately it is a weakness which is transmissib
In how far we can meet it by improved methods
nutrition, it is not possible to say. Possibly
nutritional side is not the only one side, but
must recognise one fact—that whatever the sci
tist may teach us will be of no avail if the poult
keeper himself does not connect the food and
hen; in other words, if he is not observant enou
to discover the requirements of his own flock,
as at present a fairly highly percentage of poult
men appear unable to discover whether their bi
are getting the quantity of food they require
not, it seems we have some way to go.

One striking fact in these experiments has be
that where the mineral mixture was added to
ration, the mineral content of which was sufficie
the rate of growth, so far from being accelerat
was decreased. It is also said that in certain oth
experiments to be reported later on, in which f
meal was used, the addition of the mineral mixtu
appeared to decrease egg production. If this
correct it would probably apply to meat and bo
meal also, but unless the health of the birds suffer
it is very difficult to find a reason for this.

Our problem, however, as far as the mineral c
tent is concerned, is with the highly-fecund h

EDITORIAL.—Continued.

from the 1,000 bird unit simplifying matters, in our opinion, it does much to make the position more complicated.

There is one statement in Mr. Spurgeon's article that borders on the sensational. A "live" man has told him that after a thorough investigation of our markets, he would be glad of the opportunity of starting here, of working here with our stock, and under our conditions, and would be prepared to accept contracts for the selling of eggs *at a far less price than we are prepared to accept, and then make a handsome return for himself.*

We wish we could persuade this gentleman to explain his system in these columns.

Mr. Spurgeon would not wish to imply that we are not "live" men, but that is the inference we are bound to draw. The words, "far less," rather stick, for while we admit that our methods are open to criticism on the score of efficiency, there is certainly too small a margin between present costs of production and the selling price of eggs to allow us to view the position with equanimity, much less look for a handsome return. His friend would be "glad" of an opportunity; as a "live" man we shall expect him to make it.

and the growing stock, and particularly with that pullet which starts her laying career at five months, the one which should never find a place in any breeding pen. In addition to that, there is the unhatchable egg, which to a great extent is due to the deficiency of the calcium salts in the ration.

THE WELLINGHAM EXPERIMENTS.

The first report of the S.P.B.A. Intensive Rearing Experiments has been sent me by Miss Malcolm. The object of these experiments, as my readers are aware, is to see whether it is possible, and advantageous, to rear a flock of chicks entirely intensively from the shell to productive maturity. Later on I hope to be able to publish a photograph of the house, at present I must content myself by giving the dimensions. It has a span roof and is 40 ft. x 15 ft. The ration fed is exactly that given in my article in the S.P.B.A. Register, the mineral content, especially the lime phosphates, are thought to be sufficient, as separated milk is being given in addition. If leg weakness does appear, it should not be from an actual deficiency in the ration, especially as green food will be supplied after the first week, but it is useless to make any comment yet.

S.P.B.A. 1925 INTENSIVE REARING EXPERIMENT.

First Report—January 31st Hatch.

Three hundred White Leghorns from flock pen were taken to the S.P.B.A. house, 150 were placed under a Blue Flame Hover in No. 1 compartment of the house, bedded with peat moss and straw. The chicks were fed on :—

One-third oatmeal.
One-third kibbled steamed wheat.
One-third kibbled cooked maize.

Separated milk was given as a drink. On the 6th day the chicks were given the following mash :

4 measures of midds.
2 measures of maize meal.
3 measures of Sussex ground oats.
½ measure of dried yeast.
¼ measure of linseed meal.
½ measure of fish meal.

One measure of above mixed with three measures of broad bran. Under this hover to-day, February 8th, there have been no losses.

In No. 2 compartment 150 chicks were placed under a Blue Flame Hover on a platform projecting on all sides 1 ft. beyond the ring of the hover. This platform was constructed of battens, over which was stretched ½ in. mesh wire covered with an open web Hessian. The platform stands 4 in. above the floor, under it holes are drilled 3 in. in diameter at intervals of 6 in., covered by perforated zinc. The sides of the platform are covered with the same wire, but without Hessian. It was noticed that the lamp standing on this platform had to be run with a higher flame to obtain the proper temperature. A very little straw was scattered over the Hessian on which the chicks were bedded for the first week. The chicks were fed exactly as in compartment 1, and here also have been no losses, excepting that the first night one chick was squashed.

(Continued at Foot of Next Column.)

B. MALCOLM.

February 8th, 1925.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

J. R. (Bolton) sends two formulas which have been given him as excellent for laying and breeding. No. 1 formula is an old one of mine, and the No. 2 is a very forcing one for egg production, and also very expensive. I think he would find results would be equally as good if he were to make it :—2 lbs. bran, 4 thirds, 2 maize meal, half soya bean meal, and half fish meal. If his birds are kept in bare earth runs it will be advisable in this case to replace one pound of the bran with one of alfalfa meal. This is a much more economical one than the one he sends, more than half of the ingredients of which are such expensive items as pea meal, Sussex ground oats, and dried yeast. The samples he sends are all of good average quality.

"Forethought" (Rugby) asks if I have had any experience with the "Cyphers" hot-air incubator. He has bought one second-hand, but did not have very good results. When he writes to say there is a difference of eight to ten degrees between the temperature of the suspended thermometer and the temperature of the eggs, one is compelled to think that he need not go much farther for the reason. The "Cyphers" is one of the best hot-air machines, and I think he must have fixed it up wrongly in some way or other. If he would send me fuller details I might be able to help him, but obviously he has got the thermometer much too high. Perhaps the best way would be for him to place it upon the eggs, and run the machine at 102 degrees, with the thermometer upon the eggs.

L. H. (Ilminster) writes that a friend of hers has had splendid results as regards egg production by crossing a Brown Leghorn cockerel with R.I. Red hens. Now, she has ten good White Leghorn hens and a pedigree R.I. Red cockerel, do I think that if she mated these the cross would be as good as the Brown Leghorn and R.I. Red hens for egg production only? No, I do not think so; the cross should always be made the other way—light breed males to heavy breed females. If the cross is made the other way, there is often great infertility and much broodiness in the progeny. If "L.H." wants it for egg production only, she would do much better to keep the White Leghorns pure.

A. F. (Burnley) wants a formula for fattening old hens. He should have no difficulty in this:—2 parts middlings, 1 barley meal, 1 S.G.O., half maize meal; and, if he is unable to get sour skim milk, quarter part meat meal. If he can obtain the skim milk it would assist him materially, and in fattening the ingredients should be well scalded and allowed to stand for some time, and fed twice daily. In addition to this he may give either boiled wheat or rice. Yes, it might be possible to increase the weight of Leghorns by 1 lb. by putting them through the coop. He asks how long to keep them in the coop. Well, that he must judge himself by the condition of the birds.

"Old Fancier" (Bankfoot) writes to say that as he noticed we publish results of the Laying Tests, he thinks it is only fair and just that everyone should know the number of deaths at these trials, especially one which he mentions. In the Single Bird Test there he says he knows five birds that were sent to the test, and four are dead and the other has laid one egg. These details were not sent to me, and so I could not publish, and must leave the matter as it is. "Old Fancier" must realise that I can only deal with facts, and rumours reach me but I am never able to find anyone with the courage to come forward and substantiate them.

E. F. S. G. (Pont De Brigues) wishes to know whether a cross between a Guinea Geese (as they are called in France) and a Roman Gander would increase egg production. From his description of the Guinea Geese I imagine it is what we know as the Chinese Goose, and is also known by several other names. Such a cross may result in an improvement in egg production. One could not say definitely. Generally when two poor producing breeds are crossed there is a slight improvement in egg production of the progeny. As my correspondent has plenty of grass, a few geese there should be profitable, as he suggests.

M. A. (Airdrie) has 100 pullets that were hatched the latter end of April and beginning of May, and were late in coming into lay, but in the month of December were laying better, and she was getting as high as 46 eggs a day; now they have dropped to 20. I am of opinion that she is feeding too much bulk in the mash, and would suggest that the ground oats be replaced with maize meal and the bran be reduced to two parts. Further, in the scratch feed the oats should be omitted for the present time, and instead of splitting up the grain feed between morning and night, she should give the whole of the two ounces as the last feed, and just a small handful of grain between every five birds in the litter in the early morning. To promote exercise, have the dry mash hoppers always open, and give the additional two ounces of kibbled maize as the last feed at night.

"Ulster Reader" (Portadown) sends samples of sharps at £12 10s., which are of good quality and good value for the money. Bran "B" at £10 is also fair, and I cannot think that there is anything to be gained by paying 30s. extra for the "A" sample. The meat meal at £14 is very moderate stuff. Our correspondent adds that he thinks "Eggs" is a paper which no poultry farmer can afford to do without.

A. C. T. (Kemble) asks if he mates his Rhode Island Red hens to a Black Leghorn cockerel whether he will be able to distinguish the sex of the chicks at hatching. The answer is "No"; and, in reply to his further question, the cross would prove very good layers, eggs varying from almost white to brown in colour; pullets would be nearly black, with some bronze in neck hackle and flights. I cannot answer his question as to why eggs don't hatch unless he sends me more particulars.

S. A. (Lincs.) is running a vigorous Black Leghorn cockerel with five Buff Rock hens, the latter are laying well, but a large number of the eggs are infertile. The trouble is due to under-mating, "S.A.," which often causes a high percentage of infertility. Make the pen up to 10, and you will see an improvement. I am, of course, assuming that you are not using an immature male. The sample of chick food you send contains far too much millet, and the maize is too coarsely ground.

C. A. (Hensley) sends 21 eggs by post which arrived in a liquid state. As far as I could see, the majority had not reached the 10th day, and as he describes his methods of incubation, I can only come to the conclusion that the eggs themselves were at fault. Lack of moisture, which he suggests, would not have caused such a failure as this; and if his thermometers are right the temperature was not the cause. In common with many others he jumps to the conclusion that the incubator is always at fault when a bad hatch occurs; but, unless there is something very abnormal, it is generally traceable to the breeding pen. (2) In his second question I think we can find the cause of the trouble. He is running Black Leghorns, the birds have "blue" tipped combs, and the excreta is mustard colour. The mash is:—2 parts toppings, 1 bran, 1 malt culms, 1 barley meal, 1 maize meal, 1 fish meal. Samples sent are fair in quality, except the fish meal, which contains an excess of oil, and the bran which is poor. The parts are by measure. He should change the fish meal to some well-known brand, use half the quantity, and, as he is using wet mash, omit the bran, and replace it and the malt culms with another two parts toppings.

J. L. (Wellingborough) has lost a lot of chicks from a cause which he cannot discover. Deaths began about the 8th day, and the mortality is steadily increasing, and "J.L." is very worried, but not to the extent of paying five shillings for a post-mortem examination, or becoming a member of the S.P.B.A., in which event he would have had a reply by post; now he has to wait several days. The cause of the loss is to be traced to the sample of dry chick feed he sends—at least, if that is not so, it ought to be, for this has been badly stored and there are distinct signs of mould in it. His method of feeding is otherwise correct, and the symptoms he describes are those usually found when mouldy food is used. One might mention here, especially for the benefit of students of economy, that it is not wise to use a chick feed which has been in stock since last year, even when very carefully stored, there is always the danger of its becoming damp, especially in such a season as we have had, or being overrun by mice. It is far better to use it as a scratch feed for laying stock than store it. I think the mortality from mouldy grain is a good deal higher than most of us suspect.

"Butcher" (Leamahagow) has 18 White Wyandotte hens and 40 pullets. He has been feeding them with the following wet mash and mixed corn:—2½lbs. bran, 1½lbs. Indian meal, 1½lbs. oatmeal, 10ozs. meat meal, scalded with the house scraps, and dried off with 2½lbs. bran and 6lbs. grain. In December he got 259 eggs from the hens, and in January 200. What has really happened is that in a gale the house in which these hens were perching was blown right over, and since then they have laid very badly, and now "Butcher" wants to know what to do. I am afraid I can only advise him to wait patiently. The birds have evidently been upset by the house being turned over, and to make any change in the feeding would only upset them still more, especially as the results have, on the whole, been very satisfactory. They are simply suffering from a bad nervous attack, and the best he can do is to keep them perfectly quiet, and not try any changes in the food or anything else. They will get right in time, for it is not a case which calls for special treatment.

H. W. (Mile End) sends a sample of ground oats, which, although not 'Sussex' ground, are a pure oat, and would answer the same purpose. His middlings too, are of good quality, but the maize gluten is poor, containing a lot of offal, and he should remember that I have many times advised readers not to use gluten meal now. The bran is a good sample. The fish meal, as far as appearances go, is satisfactory, but he should get a guarantee that there is not an excess of salt. He asks if I can make up a breeders' mash from the ingredients he sends, and also wants a cheaper laying mash. The cheapest laying formula we can give is:—2lbs. bran, 4lbs. middlings, 2lbs. maize meal, ½lb. meat and bone meal or fish meal, and ½lb. extracted soya bean meal. If he is running his birds in confined runs, and they are short of green food, the best mash for breeders would be:—1lb. bran, 1lb. alfalfa meal, 4lbs. middlings, 1lb. S.G.O., 1lb. maize meal, and 1lb. meat and bone meal or fish meal. I cannot make a cheaper breeders' mash than this. I would not advise the use of yeast at present prices.

"Veracity" (Surrey) asks what length of time a house should be left vacant after being occupied with birds suffering from roup, and whether it would be wise to use such a house for pullets, either with the contaminated run or fresh ground for run, and what would we advocate in the way of a disinfectant for the contaminated house and run. It is almost impossible to say what length of time a house may be left vacant after being occupied with birds suffering from roup. It is all on a par with the question as to how long an egg can be kept for incubation, or how long meals can be stored. The most sensible thing to do would be to thoroughly disinfect the house by lime-washing it, using in the lime-wash ¼lb. of carbolic acid to each gallon. Care should be taken to do this very thoroughly. The run outside could also be thoroughly limed, and the birds not allowed on it until the lime has been thoroughly washed into the ground. In reply to his question as to whether the birds which have had roup could be fattened and sold. I cannot advise this. In reply to his second question with reference to the article, "From Shell to Maturity," in the Register, the quantity of bran with the mash should be reduced as the chicks grow older. I think that is suggested in the article.

The Willows, Haydock.

Dear Sir,—I take "Eggs" weekly from my local newsagent, and out of the six papers I take it is the only one I can take and read from beginning to end.

Yours sincerely,

(Signed) A. PIMBLETT.

POST-MORTEMS.

F. C. B. The chickens arrived alive, but two died very shortly afterwards, one this morning and the other I killed, after I had post-mortemed the others. The post-mortem examination was absolutely negative, with the exception of slight enlargement of the spleens and some slight blood spots in the kidneys. From the one I killed I took a blood smear from the heart's blood, and at the same time inoculated a tube of culture for incubation. A culture was also taken from the one that had just died. The microscopical examination of the blood smear showed the blood to be swarming with bacteria of the coccus variety. This shows the trouble to be a septicaemia, and it will be interesting, and I hope helpful, to see what the particular germ is. This will take some days, but in the meantime I should advise taking measures as for an infectious disease. Isolate and take all precautions against carrying infection from them to others. Treatment will, I fear, be of little use, but the addition of yeast to the ration may help, and fifteen grains of sodium sulpho-carbolate of sodium dissolved in every gallon of the drinking water would act as an intestinal antiseptic, and might help to protect some. I will let you know as soon as possible the result of the bacteriological investigations.

H. H. N. The cause in the case of the four chicks was B.W.D. Although chill will not, of course, produce this disease, it does predispose to it by depressing the vitality during the period of most susceptibility, i.e., during the first ten days of life. After this period they acquire more or less immunity. The flock in which the casualties have occurred should be strictly isolated, and every precaution taken not to carry infection from them to healthy birds. Everything that they have come in contact with is a possible source of infection, and should be carefully and thoroughly disinfected before further use. Litter and dead bodies should be burned, and the hands and boots disinfected after attending to them, and before going into uninfected quarters. Future hatches are in danger unless these precautions are taken, which are of more importance than the treatment of the affected birds. Quinine and iron, in the form of the citrate, forty grains to the gallon of drinking water, may, however, help some of them that are not yet already affected.

C. J. S. The post-mortem and microscopical examination of the chicks showed the cause to be coccidiosis, and not as you feared, B.W.D. It is quite common to find yellow livers in chicks of this age, and need not cause anxiety, but the temperature of 110 in the hover is, in my opinion, much too high, one of from 75 to 80 being more desirable. Coccidiosis is spread chiefly by means of the droppings that literally swarm with the causative organisms, so that in measures taken to control the outbreak all litter, etc., should be swept up and burned daily, and the most scrupulous care taken, in regard to the food and water, to prevent them from becoming contaminated. To treat, dissolve one dram of powdered catechu in every three gallons of drinking water, and give on alternate days for a month, on the other days give the citrate of iron and quinine, in the proportion of forty grains to the gallon.

D. McT. The chicks were all the victims of pneumonia and "fume" poisoning. The diagnosis is corroborated by your very lucid description of their symptoms and attitudes assumed in the last stages. The tonic that you are giving is quite correct, but the ventilation of the hovers and house very evidently requires looking into, as that is the cause of the trouble. There is a splendid Editorial in "Eggs," February 11th issue, in which simple tests for "bad" air are given, and which is quite one of the most practical and authoritative articles I have read on "Chicken Rearing."

K. A. C. The cause in the case of the chicks examined was B.W.D., a disease which is amenable to no treatment, and which has a high mortality. To prevent spread the birds should be isolated, and every article of equipment that they have come in contact with mostly carefully and thoroughly disinfected. The disinfection of the hands and boots after the handling of the infected hatch is most necessary to prevent carrying the trouble to others, and the disinfection of the entire premises and equipment should prevent the infection of future hatches, although, of course, it will prove of no avail if the germs are reintroduced through the media of sittings already infected with the B. Pullorum.

E. M. D. The post-mortem examination showed the tubercles of the aspergillus fumigatus to be present in the lungs of each of these three chicks, but there was nothing to indicate B.W.D. The chicks should be isolated and treated with the citrate of iron and quinine, forty grains dissolved in each gallon of their drinking water. The fungus thrives on damp food and litter, and any of either that shows the slightest suspicion of mouldiness should be discarded. Being a fungus, the aspergillus is also found on all kinds of damp and decaying objects, and the collection and destruction of these by fire helps to remove possible sources of infection. The premises and equipment should receive a very thorough clean up and disinfection, as the spores, which are the media of infection, are very persistent and difficult to destroy.

D. S. W. O. The post-mortem examination of the chick showed the cause to be cholera, and I am afraid that the remainder of the flock will also succumb. The leg weakness is simply a symptom of the toxaemia, due to the invading bacteria, and

(Continued at Foot of Column on Next Page).

The Internal Mechanism
of the Egg-Laying Machine.

By **J. L. ROSEDALE.**

V.—RUNNING REPAIRS (Continued).

It only shows what Natur' is, sir, said Mr. Squeers. 's a rum 'un, is Natur' . . . . I should like to w how we should ever get on without her. Natur', ' Mr. Squeers, solemnly, is more easier conceived n described.''

Ve not infrequently hear a good deal about the ıe and importance of keeping as close to nature as sible in handling our flocks, and it may be well to mine the question.

'rom the human point of view, once we have done wing, all we want from our food is that it shall ply us with material for the repair of wear and , for enough energy to run our daily course, includ- a few emergencies perhaps, and that it shall keep fit and free from illness so as to extend our lives a good old age. The only production we really ry about is "Energy."

Vith poultry it is quite different. Production may ın egg-laying pure and simple in some cases. It v mean laying eggs for breeding in other cases, or it may mean production of meat in a third instance. Meat production means the production of as great a proportion of soft tissue to frame as possible. Egg-laying means that the food shall be utilised by the reproductive organs rather than for the addition of body tissue. None of the instances are quite natural, for they all have to be helped a little, and probably what is really being sought is not so much the way to follow nature as the way to make nature follow you! If nature won't follow we have to consider how far we can separate. We will discuss egg-laying first.

The analysis of the egg will give us some idea of the sort of material that has to be manufactured. It tells us, in fact, what the bird's body has to give up each time an egg is laid:—Water, 66.3 per cent.; protein, 11.1 per cent.; fat, 10.12 per cent.; ash, 1.0 per cent.; undetermined, 1.4 per cent.

We must, in addition, remember the shell, which accounts for about 10 per cent. of the total. This consists practically of lime salts, and we will assume for purposes of calculation that the egg weighs two ounces.

Eggs contain nearly 12 per cent. of protein, which in a two ounce egg means about a quarter of an ounce, therefore, if our hen eats four ounces of food daily, about five per cent. of the four ounces will have to be protein to supply the egg without leaving any to supply the bird's own needs, which must be supplied in addition, as stated in the last lecture. A light bird eating less than four ounces will require more than five per cent. for the egg, because if the egg is to be of normal composition and weight, that quarter of an ounce of protein (i.e., nearly 12 per cent. of two ounces) will still have to go into the egg. This assumes that the bird is producing an egg a day!

There is no doubt that in order to get production from the laying bird, a fairly liberal protein supply is demanded. The fear of getting them too fat by this means may be expressed, but I think the answer to it lies in the breed. Some birds will get fat on almost anything except fibre, while others have the inborn capacity of utilising their food for egg production. Heavy egg laying means a heavy protein demand.

Protein, if you like to use the term—forces. It increases "Production," whether growth or egg laying is concerned. Whether forcing is desirable or not is a matter for the individual to consider, though there is a certain amount of information already to hand on the subject. If we desire, as with ourselves, the attainment of a good old age, then we may stick as closely as possible to nature and a low protein diet.

We may now consider the mineral requirement of the egg. The analysis of the edible portion is as follows (Sherman):—Calcium, .06; Magnesium, .01; Potassium, .14; Sodium, .14; Phosphorus, .18; Sulphur, 195; Chlorine, .106; Iron, .003; all per cent. With regard to the shell, we are most interested in the amount of lime. Plimmer and Lowndes (Biochem. Jour., 1924) have shown that under all circumstances three grammes of lime is going to be ample for each egg laid. In the diet of a laying hen it is quite unnecessary to concern ourselves over the lime supply other than to supply either a grit hopper in the pen or a sufficiency of animal meal in the ration.

I do not think there ever was a hen in the whole

POST-MORTEMS—Continued.

in fact a species of intoxication. If you decide treat the survivors, remove them to fresh ırters, and give sodium sulpho-carbolate, at the e of fifteen grains to the gallon, in their drink- water. The infected premises will need a very rough disinfection before being safe to use ain for a fresh lot of birds, although birds that recover acquire a lifelong immunity to the ease.

C. In reply to your queries, coccidiosis is ısed by a microscopic organism that invades the ca of birds, and by migration secondarily the r. There are several species of coccidia, each ecting their particular animal or bird as hosts. ey vary somewhat in their morphology, but in main essentials have the same life history and nner of reproduction. The organism that ects birds is named the coccidium tenellum, and duces great losses both in chicken and turkeys, ıcocks, and pheasants, etc. Wild birds also are acked, and are very often responsible for an break. The coccidium has been found both in ovary of birds and also in eggs, and many cks are actually infected before they are ched, so that in that case the disease may be ken of as hereditary, but, unlike certain other eases, there appears to be no immunity pro- ed, any individual being liable to suffer invasion exposed to infection. Chill would have abso- ely nothing to do with it, it is solely the coccidia t are responsible.

country that suffered a mineral shortage of any kind that lived in a pen with a grit hopper.

The vitamin supply is important, as you cannot put it into the grit box. Normal egg yolk has a supply of A. vitamin equal to cabbage. About 30 per cent. of the egg consists of yolk, which in a two ounce egg corresponds to about 20 grams, or roughly two-thirds of an ounce. Thus the usual green food supply allowed to birds on most farms should suffice for the requisite amount of the fat soluble vitamin, provided you get them to eat it.

The importance of B. vitamin to health and growth has already been urged in these lectures, and also in the various papers by Professor Plimmer. Putting our Barcelona figures into round numbers, we should require 10 per cent. of B. vitamin in the diet in terms of the strongest extract with which we worked at that time. In practice, of course, we don't want extracts; we must get our supply from ordinary farm foods, because it does not pay us to buy anything extra. In the last lecture it was pointed out that care must be used in seeing that our diet was balanced with regard to B. vitamin. The hen needs B. vitamin for her own health, and some more besides to put into the egg. If once the importance of B. vitamin to growth is grasped it will not be difficult to appreciate how essential it is to provide a generous supply to the egg. One or two points in this regard were mentioned in the first lecture. It was pointed out that the growth rate was greatest in the chick during incubation, and that this growth started in the early stages. Egg yolk is known to be very potent as regards B. vitamin. Some day we hope we may have an exact comparison of the vitamin content of different foods. We do not know this yet, although so many years have passed since these substances were "discovered." We must, therefore, meanwhile be particularly careful to use what foods we require with especial caution, so as to avoid a deficiency.

It is a curious fact that while many poultry-keepers complained bitterly that the early season of 1924 was disastrous as regards hatching and rearing, some others that I met were quite satisfied. It is unfortunate that time will not permit on this occasion for a detailed study of some of their different diets, as there lies behind most of them some pretty assuring evidence regarding B. vitamin.

(To be continued.)

"Ashmead," Garstang, near Preston.

Dear Sir,—I would like to add my appreciation of your efforts in making "Eggs" so useful and interesting to poultry-keepers. I look forward each week to receiving my copy, and am always sure to find something new and helpful to me. I have long ago ceased to take other poultry papers, as I find that the help one gets from "Eggs" is far more reliable. I wish you, "Eggs" and the S.P.B.A., a very prosperous New Year.

Yours sincerely,
(Signed) W. R. LORD.

Menadews, St. Clements, Truro.

Dear Sir,—"Eggs" is packed full of information from cover to cover, and contains more practical information than any two contemporary journals.

Thanking you, yours faithfully,
(Signed) L. CHOAK.

Sanitary Science,

As applied to Poultry Farming.

By **A. SAYERS,**

Lecturer in Sanitary Engineering, Heating, and Ventilating, Municipal College of Technology, Belfast.

(Continued.)

I make no apology for repeating cleanliness
the brooder house is most essential, and in
direction is it more necessary than in connecti
with feeding and drinking methods. Adopt wh
ever system of feeding—wet or dry—you like, g
your birds whatever drink you may, the vess
must be of the simplest type and lend themselv
to washing, scrubbing and scalding (sterilising

Don't let it be supposed that feeding and drin
ing chickens is an easy job. It is nothing of t
kind. The little downeys want to go into everythi
with their feet, but must not be allowed to do
The food and drink must be accessible, and inde
temptingly near, but beaks only must be allow
into the feeders and drinkers. Not one drop
water or milk must be spilled, and not so much
one particle of mash be scattered on the flo
there to be trampled into the litter to sour a
destroy the sweetness of the atmosphere, or
picked up by the chickens and result in intern
disorder.

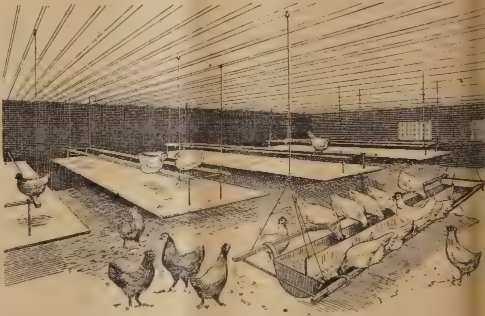


Fig. 2.—The "Happihome" Shed.

The best results are obtained by placing t
drinkers and feeders of proper design on a sa
sprinkled platform, slightly raised above the litt
All this detail may seem troublesome, but the ve
reverse is the case. If the methods set out a
adhered to particularly in the small detail, t
labour of chicken rearing would be reduced
half, and the worries will transform into pleasu

We have now reached the stage when you shou
have at least 95 per cent. of your original hatc
plump sturdy youngsters, well feathered at
weeks old. Some readers will perhaps think th
is a very liberal percentage of rearability. We
I don't mind saying that the poultry-keeper w
does not rear at least 95 out of every 100 has on
himself to blame. His housing, plant or metho

re wrong, and he should remedy them or quit at nce.

At the age of six weeks, more or less, you will erhaps want to get the chickens away from arti- cial heat. This is the most critical period of all. smiling April morning is chosen to shift the flock f "Nonesuch" to that fresh green spot, so care- lly reserved for their reception, all looks lovely the best of well-conducted poultry farms. Sud- enly one of those April showers that "bring forth lay Flowers," and sometimes smashes windows, omes down, and the young pullets get wet with leet or hailstones, perhaps for the first time. They ish for shelter and miss the warmth of the brooder. search of heat they pile on top of one another ith disastrous results. May I offer a word of arning to those unacquainted with weaning a rge flock of chickens from artificial heat? You ust exercise care, and still more care, else you ill lose the fruits of your six weeks' good nursery ork. Much could be said on this particular period f poultry farming, but I must keep within the mbit of sanitary science.

LAYING SHEDS.—The laying shed or adult uarters next present themselves. Notwithstanding hat has already been said, much might be added n the question of the building, but I will confine yself to saying that every poultry house should e long enough, broad enough, and high enough to llow the unrestricted wielding of the brush, fork nd rake with plenty of elbow and head room for e attendant to move about.

Hen houses should be warm in winter and cool summer, well ventilated and lighted, with no orners where dust or filth can lodge. The walls side must be flush, with no projections where a ird can perch and soil with droppings.

Fig. 2 shows a section of a laying shed with erches, dropping boards and feeding troughs. ll designed on hygienic lines to save labour, and ake poultry-keeping attractive. It will be noticed at the shed is sparsely furnished, but everything equired is there. The furniture is all suspended om above by fine wire. There are no supports om the floor to obstruct cleaning operations, and ere are no hiding places where Red Mite or the caly Leg producing Parasite can lurk; every part the perch and droppings board is within easy each of the trowel and whitewash brush. The eding troughs are suspended, making them at ce rat-proof. It will be noticed that the hen as to reach down to the food; this prevents her om shovelling it over the side of the trough. he birds have to hop up on the perch to feed, d this light exercise is most beneficial. The inking troughs must also be fixed above ground vel, and they, too, should be approached by a erch. Underneath the drinking cup should be aced a tray to receive the drippings from the eak and wattles. This precaution will prevent e adjoining floor becoming wet.

Whether you are working large or small flocks will be an advantage to have the water container an enclosed vessel to prevent the drinking water being contaminated, and the drinking cup should be small so that the minimum quantity of water is exposed. If you are running a large shed the water container may perhaps be required to hold fifty gallons, if a small flock a gallon or even half-gallon size may be large enough. But whether large or small, keep the water in an enclosed tank, and feed it down automatically as the birds drink it.

Arrangements must be provided for a supply of hot water to wash the drinking vessels, and boiling water to sterilise them frequently. Cleanliness must be strictly observed, not alone in connection with the litter and droppings, but still more so in the methods of feeding and drinking the flock. If poultry-keepers would only practice a little more of the science of brushing, washing and scrubbing, what a lot of trouble and loss would be avoided.

(To be Continued.)

YORKSHIRE FEDERATION OF POULTRY SOCIETIES' INTERNATIONAL LAYING TEST, 1924-25.

Report for the Fourth Month—10th Jan. to 6th Feb., 1925.

The Manager reports as follows:—The Fourth Month has been a very severe one with strong east or west winds prevailing nearly every day, also some frost and hail and a very heavy rainfall causing a heavy strain on the birds, several having to be isolated with colds. It has also caused a check in egg production, and many of the birds that were in full lay have gone into a moult. There have been two deaths during the month, Nos. 404 and 153. The size of egg is still improving, one or two pens especially having an average all through the pen of from 2¼ to nearly 2½oz. per egg.

The total number of eggs laid this month is 6,720, an average of 11.3 per bird.

Hon. Secretary: Mrs. VOWLES,
Beningbrough, York.

The leading pens to date, with their records and positions are as follows. (Figures are Eggs and Points respectively):—

Class A. Section 1. White Leghorns.—Mrs. Clay, Long Preston, 410, 402; R. H. Fryers, Bradley, Keighley, 380, 370; Mr. and Mrs. Wade, Bishop Thornton, 328, 322.

Class A. Section 2. Black Leghorns.—R. Rodwell. Nelson, 334, 328; A. White, Malpas, Cheshire, 283, 293; Mrs. Clay, Long Preston, 282, 294.

Class A. Section 4. White Wyandottes.—Dr. J. E. Helm, Newchurch-in-Rosendale, 385, 378; Mrs. Clay, Long Preston, 318, 335; A. Snowdon, 333, 326.

Class A. Section 5. Rhode Island Reds.—Sutton and Son, Little Hoole, Preston, 284, 310; M. A. Hindmarsh, Skelton. York, 286, 293; R. Rodwell, Nelson, 236, 238.

Class A. Section 6. Any Other Variety (Heavy).—Davey and Son, Sutton, Keighley, 338, 355; Wright and Fortune, Keighley, 302, 304; J. R. Readman, 200, 209.

Class C. Section 9. Any Variety Light Breed. Single Bird Section.—Wm. Wharton, Keighley (W.L.), 80, 78; R. and A. Johnson, Chalford, Glouc. (W.L.), 73, 76; Mrs. E. Kaye, Poole, Leeds (W.L.), 72, 73.

Class C. Section 10. Any Variety Heavy Breed. Single Bird Section.—Alf. Sawyer, Crosshills, Keighley (R.I.R.), 77, 85; M. E. and A. Robinson, Bawtry (R.I.R.), 82, 84; Mrs. Hawkesworth, Pool (W.W.), 78, 81.

SIXTH MIDLAND LAYING TEST.

Third Month (84 Days), ending Jan. 25. Three Leading Pens in each Section.

White Leghorns.—Arthur Snowden, 190 eggs; A. Pickard, 189; C. J. Ashton, 183.

White Wyandottes.—C. H. C. Partridge, 193; J. Dowden and Son, 184; Will Barron, 177.

Rhode Island Reds.—Mrs. Athol Stuart, 174; Major Kingscote, 164; K. A. Crawford, 163.

Light Sussex.—F. R. Welch, 151; Ch. and J. A. Thompson, 142; W. H. Brady, 134.

A.O.V. Light Breed.—Ed. Thomas (W. La. Br.), 125; R. A. Fawsett (Bl.L.), 106; Blaksley and Blyth (B.L.), 105.

A.O.V. Heavy Breed.—H. W. Gee (Barn.), 112; Mrs. L. C. Lees (Bf. R.), 87; J. G. Herbert (Barn.), 82.

Single Bird.—F. Nicholls (W.W.), 54; F. A. Ramm (B.L.), 51; J. Small (B.L.), 50.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

THE FOOD SCHEME.

I have received quite a number of letters from members in connection with the Food Scheme. Either I put my case very badly, or some of you have failed to grasp my meaning. For example, I stated (I think very clearly) that it would be necessary for members to combine, and buy in two or four ton lots, and arrange the distribution themselves; yet I am in receipt of letters asking me to quote prices for small lots of three or four cwt. It should be obvious to everyone that we can only buy at wholesale rates by buying in bulk, and in that way only can we effect any reduction in rail charges. If there are individuals who can take two or four tons lots, they can, of course, be supplied.

I will take for the benefit of everyone some of the questions which have been asked, and will answer them to the best of my ability:—

(Q.) Will all samples of foodstuffs sent to members be submitted to you for approval?
(A.) As far as possible, this will be done; the question of quality is of the greatest importance, and the Council have always this in view.
(Q.) Will best quality only be supplied, or will second grade be supplied also?
(A.) If one group of members preferred second grade, they could be supplied; but we cannot send consignments of mixed first and second grades.
(Q.) Where will the goods from H—— be supplied from?
(A.) Every effort will be made to supply the goods from the nearest centre, so as to avoid heavy railway charges.
(Q.) How are members to get quotations for what they require?
(A.) Quotations will be sent from this office by post to the person appointed by the "group" at least twice weekly.
(Q.) Is all the food coming from one depot?
(A.) The answer to this is—NO.
(Q.) To whom will complaints be sent?
(A.) To the unfortunate writer of these words. Members are dealing with the S.P.B.A., and not with the firm concerned.
(Q.) Will it be possible to supply in one ton lots?
(A.) I cannot answer this question yet, and members must realise that there is a considerable saving on freightage as between one and two ton lots.
(Q.) Can I obtain samples?
(A.) No, we cannot arrange to send samples.

I have had a great many questions as to prices. May I point out that it is premature to ask this yet. We are right at the beginning, and what we do want to know is:—

ARE MEMBERS WILLING TO COMBINE SO THAT THEY MAY BUY IN TWO OR FOUR TON LOTS, ACCORDING TO THE STRENGTH OF THE COMBINATION?

They are not committed to anything by telling us that they are willing to do so. Someone has written to say that the scheme will be of no use to him, as he only keeps 100 fowls. He is the man who should benefit by it, if he will only awake to the fact that it is up to him to find five or six others to combine with him. At the risk of being thought disagreeable, I must impress on some of our members that spoon-feeding is not good for them, and they must help themselves a little. We cannot go round the country to try and induce four or five members to meet and buy together. That is for the man on the spot who wishes to participate in the scheme to do. Please keep to the point at present:—"ARE YOU WILLING TO FORM A GROUP?" IF SO, LET US KNOW.

THE GLOUCESTERSHIRE BRANCH.

On Thursday, the 12th inst., I journeyed to Cheltenham, and lectured there in the afternoon and evening. Mr. F. Bacon presided, and all the arrangements were made by the Secretary, Mr. E. A. Craft. In the afternoon I took as my subjects "Line-Breeding: Is it Advantageous or Advisable for Egg Production?" "How to Avoid Small Eggs," and "Dead-in-Shell." In the evening my talk was on "SOME CAUSES OF FAILURE," and I was followed by Mr. A. H. Brain, who gave a most interesting and instructive paper on "Roup and Associated Diseases." There was a good attendance at both meetings, and the interest was keenly maintained to the finish. I am pleased to see we have such a live branch, and what a great interest is taken in the district.

From Cheltenham I went on to Altrincham, where they have, it is perhaps unnecessary for me to say, a very strong society. My paper there was on "HATCHING AND REARING," and there was again a good attendance, and a great number of questions from a very keen audience. My own impression is that the best part of these lectures is the questions that arise from them; to me that it always the best part of the evening, and I think the most instructive. I wonder why so many people are so shy in asking questions. At nearly every meeting there are numbers of those present who will come up and ask you some question which they will tell you they did not care to ask in public—why, I do not know, as they are usually sensible enough, and might have been helpful to those present.

PRECOCITY.

A member writes to ask what I consider the cause of "Precocity," and how best to check it. Precocity, in its broadest sense, is due to the continuous selection for high fecundity, and for that reason it can only be kept within bounds by selection; and by keeping all these precocious birds out of the breeding pen. These precocious birds—and by precocious is meant those

(Continued at Foot of Column on Next Page).

Correspondence.

FOOD PURCHASE SCHEME.

To the Editor of "Eggs."

Dear Sir,—As you invite suggestions to the scheme as put forward in last week's "Eggs," I venture upon the following tentative propositions in order that all our members should understand the great advantages they can derive from it, and in order that the many thousands of readers of "Eggs" should appreciate the fact that it is IN THEIR OWN INTEREST to become members of our Association.

In the first place QUALITY. In your modesty you did not make it clear that your great experience was to be at our disposal, so that ONLY REALLY SOUND FOODSTUFFS would be supplied.

In the second place PRICE. To the small man the saving should be considerable, and to the larger man he would be free of the anxiety as to quality, and the price would be at least as low as he is paying now.

In the third place, Centres of Distribution. Under the tentative arrangements discussed in London when you, Mr. Bostock Smith, Mr. Dowden and I went into the matter with our proposed sources of supply, the following centres of supply were proposed :—London, Bristol, Cardiff, Birmingham, Liverpool, Hull, Chester, Newcastle, as also, I think, Glasgow, Dublin and Belfast. If I might suggest, it would be as well to make this clear, as from the note published many would think they had to draw their supplies from London, with say to Yorkshire, a prohibitive railway rate.

In the fourth place, I would suggest you invite some of our public-spirited members to give you their names to act as local agents to collect orders, e.g., I would be delighted to take the lead here ; but only by, say, my name being published as a proposed local agent (unpaid) can possible co-operators know to whom to write, unless you wish to be inundated with 6,000 letters at Rudgwick.

In the fifth place, I would suggest that every week you publish a prices current "without engagement," showing costs of various foodstuffs, a growing list, of course, as we feel our way, free on rail at the various points detailed in my third paragraph.

Sixthly and lastly, it is a question whether it would not be possible to put up in sacks the following mixed mashes or feeds, e.g., Layers' Mash, Breeders' Mash, Concentrated Chick Mash, Chick Feeds 1 and 2, to say nothing of some sound foods such as Uveco, to mention one at random.

I append a suggested "prices current" form to give you the idea of what I have in my mind, which would want to be elaborated somewhat, but which would enable people to send you a cheque with order, any alteration in market price when the order is actually placed to be adjusted on execution. If this is not done no one will know how much cash to send, and your postbag will grow to abnormal proportions.

I trust these friendly suggestions will prove of use. I only make them because, as you know, I am deeply interested in the scheme, and want it to be a success.

Yours faithfully,

FRANCIS J. HEMELRYK.

Old Mill House, Partridge Green.

We thank Mr. Hemelryk for his letter, and for the assistance given us in further explaining the scheme. As will be seen in the explanation in another column, it is suggested that prices will be sent to the various groups at least twice weekly. The question of the mashes, etc., is a matter which we shall have to leave for further consideration.—(Editor.)

YORKSHIRE SPACED-BOARDING.

To the Editor of "Eggs."

Dear Sir,—In your 21st January issue Mr. Abram asks for information regarding Yorkshire spaced-boarding for poultry houses.

When in Sussex I had a good deal of experience in this kind of roofing, which I obtained from Wisbeach, creosoted under pressure. I should say it is quite unsuitable for poultry houses for the draught, and even for open cattle sheds, for some distance up from the eaves I found it necessary to put slats on the open spaces. Very little rain comes in, but snow, of course, finds its way through. The boards are laid in "prison door" nails, which are first put into the purlins, thus allowing any water that gets over the edge of the board a free passage passed the purlin. The nails in the boards are fixed a little further in towards the centre, thus having a tendency to divert the water away from the edge.

Yours truly,

F. W. MORTON.

The Scientific Poultry Breeders' Association.

Continued

which lay at a very early age, or cockerels which mature sexually very early—are generally very fine in bone, and lacking in body size. My correspondent asks whether it is in any way due to environmental conditions. I do not think so, that is—directly. It is fundamentally a matter of inheritance, but obviously a highly favourable environment will have its influence.

LEG WEAKNESS.

To the Editor of "Eggs."

Dear Mr. Newman,—Some weeks ago I wrote a letter to you to the effect that it is held in some scientific quarters that vitamins are nothing more than, so to speak, bottled up ultra violet rays. Further, that vitamins can be replaced in devitamised food, by exposing this to ultra violet rays; also that the ultra violet rays emanated from materials that have been exposed to the sunlight; and that animals can exist without vitamins, so long as they come in contact with materials that have been exposed to sunlight.

Several persons, as a result of this letter, mentioned the fact that this theory might account for the absence of leg weakness in chicks that were kept in litter composed of bran.

Personally, I should have thought that the absence of leg weakness under these circumstances was due more to the insulating effect from hard wooden floors, also that the bran holds a certain amount of warm air in between the particles. This is more or less inert air which acts as an excellent insulator, the chicks' legs get buried in the bran, and, as a consequence, do not get overheated as they lie under the hovers. On the other hand, it may quite well be that there are emanations from the bran, of either vapour or rays which are beneficial to the health of the chick. Dr. E. F. Green, well-known in the photographic world as the inventor and designer of remarkably efficient liquid lenses, writing in the "Amateur Photographer" some weeks ago, says: "My theory was, and is, that the liquid lens transmits rays of ultra violet and infia red light to which an ordinary glass lens is impermeable. Further, I now advance the theory that all objects give off invisible rays after the sun or other source of light has been withdrawn, and that there is an aura surrounding objects, capable of being demonstrated upon photographic plate, which is not visible to the human eye."

As there seems to be a certain amount of circumstantial evidence to show that something is given off from materials exposed to sunlight, which is beneficial to animal life, it gives us the tip that it may be well worth our while to use bran as litter under the hovers, and that since bran contains vitamins in greater proportion than other parts of the wheat grain, it is probably because bran is capable of absorbing and holding the ultra violet ray more readily than other materials used as litter. By exposing the bran, used as litter, to the light, and especially sunlight, daily, we may get even better results, and possibly find the emanations from the bran a substitute for green food, if the ultra violet ray-vitamin theory is a correct one!

This is merely a suggestion that some of your scientifically inclined readers might care to try out some experiments on these lines: (1) A pen of chicks kept under a hover, using dry earth as litter, changed every three days. (2) Another batch kept under a hover where bran is used as litter, but only changed once every three days. (3) A batch kept under a hover where bran is used as litter, but is changed about, one lot being under the hover for 24 hours, and at the end of this time being cleared out, put on a tray and exposed to daylight, and, if possible, sunlight for a number of hours, in the meanwhile the bran taken out, being replaced by another lot of bran, which, in its turn, will next day be cleared out, exposed to light, and the other lot put back under the hover. By this means we might get at some tangible result.

C. S. ROSCOE.

WHITE BRESSE.

To the Editor of "Eggs."

Dear Sir,—As a great admirer of Bresse I should like to say how much I agree with the remarks of Mr. H. F. Hawkes in your issue of 11th February. It seems incomprehensible that a rival club should be set up at such a time as the present. The breed has proved its economic qualities under the present standard. Why then should anyone wish to alter it? Such a scheme seems to have no constructive value.

Mr. Hawkes, as Vice-President of the Bresse Club, has certainly done the right thing in protesting against it, and I think it our duty to do all we can to make such an uncompromising spirit null and void. No one could wish the new club success who had the real interests of the breed at heart.

Yours faithfully,

"EX-GRAHAM."

MATERIAL FOR SHUTTERS.

To the Editor of "Eggs."

Dear Mr. Newman,—Re enquiry by P. L. S. as to material for shutters of fowl houses. I have used green Willesden rot-proof canvas, and can recommend this. In looking up my accounts I find I purchased 10 yards, 60 in. wide, at 1s. a yard in 1921 from one of the large houses in London (advertised in the "Daily Mail"), and this was fixed into shutter frames, using builders' laths **all round** for clinching.

The material is quite sound to-day, although it gets wet every time it rains; it is strong, and lets air and light through to a fair extent. I trust this reply will be of service to your correspondent and others.

Yours faithfully,

J. HOPE ALLAN.

OUR FRONT COVER.

[r. W. M. Golden, the owner of the wonderful ite Leghorn hen depicted on our front cover, will etter known to most of our readers as a breeder Rhode Island Reds, his strain having achieved a derful reputation as egg producers. But he has ething equally as good in White Leghorns, and performance of "White Princess," 280 eggs 2¼ozs. welve months, is something of which he may well proud. His championship pen laid the highest age number of eggs laid by any of the 1,500 comng in the National Laying Test, 1919-1920, the birds laying 2,165 eggs. A son of "White Princess" nated to eleven hens, with individual records ing from 235 to 242; all typical birds, and all rs of large eggs. Mr. Golden has some wonderful of White Leghorns; he has also some splendid of Light Sussex.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION
GLOUCESTER BRANCH.

very successful meeting of this branch was held in Chelten in the afternoon of 12th February, when a good attendance embers from all parts of the country met to hear Mr. nan read short, but most interesting and instructive papers

Is line-breeding necessary or advisable for heavy egg pro-on?

What are the best steps to take to avoid dead-in-shell?

How can we improve size of egg?

cussion followed each paper, and many questions were

er the meeting tea was partaken of by many of those pre- and a pleasant social hour was thus spent.

the evening a public meeting was held, at which Mr. New-again spoke, the subject of his address being "Some Causes ilure."

meeting was also addressed by Mr. A. H. Brain, Organis-Director of the Midland Federation of Feather and Fur ies, who spoke on "Roup and Associated Diseases on the al Farm."

E. J. Bacon, the President of the Branch, presided at both ngs.

next meeting of the Branch will be held at Cheltenham ursday, March 5th, at 7.30 p.m., when Mr. H. R. Hunt will about the "Analysis of Foodstuffs."

ERNEST A. CRAFT, Hon. Sec.

Toovey asks us to make the following correction:—"The mentioned over which rearing is spread should read five s—not three, as mentioned in my article. If necessary, st hatches come off about the middle of May."

G SHOW AND LECTURE IN THE TEMPERANCE HALL, KEIGHLEY.

Keighley and District Branch of the S.P.B.A. will hold g Show on February 25th for four classes of hatching eggs pure-bred stock. Class I.: Six brown eggs. Class II.: Six eggs. Class III.: Six white eggs. Class IV.: Six duck any colour. No entry fee. Awards of merit will be made articulars communicated to the Poultry Press. Judge: Mr. Wilcock, Editor of "Poultry News." Packages of eggs be addressed:—The Secretary, Keighley and District h of S.P.B.A., Temperance Hall, Keighley. Judging will ence at 6.30 p.m. prompt.

r awards have been made the eggs will be sold for the t of the society. The co-operation of all members is invited ke the show a success. Please send your entries early. the sale of eggs Mr. Bruce Wilcock will give a lecture. ubject will be: "The Elusive Winter Egg and How to It." Questions are invited on any subject relative to y culture. Everyone interested will be welcomed.

Mrs. A. WILSON, Hon. Sec.

The first ten positions for specials offered to members of the Keighley Branch of the S.P.B.A. in Class C. are as follows:—

Section 9.—1, Wm. Wharton, Keighley (W.L.), 80 eggs, value £1 1s. 5¼d.; 2, H. Kershaw, Keighley (W.L.), 58, 17s. 9d.; 3, S. Hartley, Haworth (W.L.), 67, 17s. 7¾d.; 4, S. Preston, Haworth (W.L.), 52, 15s. 11¾d.; 5, Wright and Fortune, Keighley (Ex. L.), 55, 14s. 9½d.; 6, J. H. and W. Brayshaw, Keighley (W.L.), 56, 14s. 5½d.; 7, B. and W. Atkinson, Thornton (Bf. L.), 53, 14s. 2d.; 8, J. Paget, Utley (W.L.), 45, 13s. 7¾d.; 9, Wm. Wharton, Keighley (W.L.), 45, 13s. 4¾d.; 10, H. Kershaw, Keighley (W.L.), 46, 12s. 10½d.

Section 10.—1, Alf. Sawyer, Crosshills (R.I.R.), 77 eggs, value £1 3s. 6¼d. 2, Mrs. Hawkesworth, Pool (W.W.), 78, £1 2s. 1¼d.; 3, J. Brown, Glusburn (R.I.R.), 76, £1 1s. 1½d.; 4, H. Downsbrough, Bradshaw (W.W.), 77, £1 0s. 3¾d.; 5, Wright and Fortune, Keighley (W.W.), 67, 19s. 0¼d.; 6, H. Downsbrough, Bradshaw (W.W.), 63, 17s. 1d.; 7, Miss Taylor, Cullingworth (W.W.), 69, 16s. 11d.; 8, J. H. and W. Brayshaw, Keighley (W.W.), 58, 16s. 1d.; 9, C. Macaulay, Keighley (R.I.R.), 58, 15s. 5¾d.; 10, Fred Slee, Keighley (Bf.R.), 49, 14s. 11d.

APPLICANTS FOR MEMBERSHIP.

Romanes, F. J., Brick House, Duton Hill, Dunmow.
Starr, G. H., Eng. Capt., R. N., Hillside, Halland, Sussex.
Wilson, A. J., Oakbank, Whitehaven, Cumberland.
Stephens, Miss Greta, The Mount, Winchcombe, Glos.
Peak, Frank, Heys Farm, Holly Grove, Dopcross, near Oldham, Yorkshire.
Wellesley, Capt. G. J. Shepherd, Winsford Hall, Stokesly, Gt. Yarmouth.
Paley, Miss K. H., Moorgarth, Caton, Lancaster.
Simpson, Major H., Moorhouse Hall, Warwick-on-Eden, Carlisle.
Mitchell, Dr., Staverton Hall, Daventry.
Perks, W. H., Newlands, Clows Top, Kidderminster, Worcester.
Coulson, William, Toll Bar P.F., South Road, Walham, Lincs.
Willis, A., The Birches P.F., Coal Aston, near Sheffield.
Peacock, J. Lonsdale, Pixton Hill Farm, Forest Row, Sussex.
Hunter, Mrs. V., Cauldron Barn Farm, Swanage.
Pennington, Alfred (Junr), The Bungalows, Rainford, near St. Helens, Lancs.
Bliss, D., 253, Mount Pleasant Road, Hastings.
Jackson, Miss M., Bellows Cross, Cranborne, Salisbury.
Dewar, J. W., The Manor, Preston, Lavernham, Suffolk.
Spurgeon, H. D., Woodlands P.F., Lyminge, Kent.
Hully, Robert Wm., Green's Farm, Clifton, near Manchester.
Chave, T. A., Halberton, Tiverton.
Higginson, Mrs. M., Utility P.F., Stanwardine, Cockshutt, Ellesmere, Salop.
Reece, J., Victoria Farm, Dukinfield, Cheshire.
Stanion, A. C., Fruit Grower, Long Sutton, Lincs.
Rice, Douglas A., The Court House, Farnham, Surrey.
Rhys, T. Wilson, Manor P.F., Boughton Lees, Ashford, Kent.
Rhodes, F. W., South-Eastern Agric. College, Wye, Kent.
Ward, F., Exeter House, Brent Knoll, Somerset.
Donovan, Henry B., Seafield, Tralee, Co. Kerry.
Markham, Jos., Linden Lea, Beltoft, near Doncaster.
Imrie, Geo., Failford Sawmill, Tarbolton, Ayrshire.
Hunt, John M., Fairlight Cottage, near Hastings.
Cavender, Jas. R. J. (Senr.), 84, Earlswood St., East Greenwich, S.E.10.
Allan, W. (Junr), Dumpford, Rogate, Petersfield.
Huckerby, G. W., "Pwllycrochan," Manor Drive, Hartley, Longfield, Kent.
Pebble Hill P.F., West Horsley, Surrey (H. E. Weller).
Tabron, J. Geo., 128, Kent Street, Barrow-in-Furness.
Edey, Ernest, Upleadon, Newent, Glos.
Hamilton, W. S., "Fairview," Droit, Newtownstewart, Co. Tyrone, Ulster (N.I.).
Moon, L. G., East Lodge, Trinity Manor, Jersey.
Turner, John Jas., 4, Houghtown St., off Baxter's Lane, Sutton Oak, St. Helens, Lancs.
Knights, H. C., Council Houses, Swafield, Nth. Walsham.
Darwell, G. P., Hurst Farm, Biddulph, Staffs.
Duncan, Miss E. A., Tarbert, Acharacle S.O., Argyleshire.
Gallan, W. C., Brodick, Isle of Arran.
Brook, Jas., Hey Farm, Lowerhouses, Huddersfield.
Harris, John H., Station House, Fenny Stratford, Bletchley, Bucks.

VETERINARY TESTS FOR POULTRY DISEASES.

The Ministry of Agriculture and Fisheries announces that owing to the increasing number of poultry submitted to the Ministry's Veterinary Laboratory for post-mortem or other examination it has been found necessary to appoint a special officer to undertake this examination work. At the same time it has been decided to institute a scale of fees to be charged **as from 16th March next.**

The charge for an ordinary post-mortem examination will be 3s. a bird. In the case of flocks suspected of being infected with Bacillary White Diarrhoea, an inclusive fee of 10s. is payable, in respect of whatever number of tests are required to establish or otherwise the existence of the disease in the flock. In flocks where this disease is found the remaining birds will be tested for elimination purposes at an additional fee of 1s. a bird. In all cases fees are payable in advance.

Special terms will be allowed where birds are submitted in quantities (e.g., from egg-laying competitions) for post-mortem examination or for the agglutination test for Bacillary White Diarrhoea. Particulars may be obtained from the Ministry's Veterinary Laboratory, New Haw, Weybridge (Station: Addlestone, S.R.). Birds submitted for post-mortem or other examination should be sent direct to that address, carriage paid, accompanied by the necessary remittance. Postal orders, etc., should be made payable to the order of "The Ministry of Agriculture and Fisheries," and crossed "and Co." Postage stamps cannot be accepted.

Ministry of Agriculture and Fisheries, 10, Whitehall Place,
S. W.1. 19th February, 1925.

INCOME TAX.

The National Poultry Council desires to call the attention of Poultry Farmers to the importance of their communicating with it in respect to claims which may be made by the Inland Revenue Authorities for Income Tax Assessment under Schedule D. In some instances the Inspectors of Taxes have recognised the decisions of the Special Commissioners that Poultry is Husbandry within the meaning of the Finance Acts, but in other cases are refusing to do this, and making claims for payment upon the basis of profits.

Until this question has been settled in the High Courts of Justice, the matter remains undecided. In a very important case the Inland Revenue has given Notice of Appeal, and it is hoped that this will shortly be heard, so that the law may be interpreted in a uniform manner. The National Poultry Council has undertaken to help financially to a considerable extent in this case, as it is recognised that it may determine the position. Where the Income Tax Authorities are pressing for payment of assessment under Schedule D., it is suggested that they should be asked to allow such claims to remain in abeyance until the test case has been heard. In several instances they have agreed to this course.

SALE OF DISEASED BIRDS.

The attention of the National Poultry Council has been called to several instances in which birds have been sold by dealers and others, which were affected with Roup and other Diseases, and as a result great loss has arisen. For some time the National Poultry Council has been pressing upon the Ministry of Agriculture the necessity for inspection of Poultry at Auctions and Markets, the same as with larger stock. This would not, however, reach the dealers who dispatch birds from their own places direct to customers. It may be pointed out that to sell birds that are diseased would appear to be a contravention of the law, and that those doing so would be held liable for injury done. There are however, points which have to be determined, and in the meantime in order that such practice shall be prevented, any cases arising should at once be reported to the National Poultry Council, 20-21, Essex Street, London, W.C.2.

FARMERS AND POULTRY-KEEPING.

At an Agricultural Conference held in the Council Chamber, Birmingham, under the auspices of the Central Chamber of Agriculture and the Birmingham and Midland Chamber of Agriculture on February 19th, the following resolution by Mr. Stanley Street-Porter was unanimously adopted:—"That in view of the present important of poultry keeping as an adjunct to general farming, and as a valuable source of food supply to the nation, this conference is of opinion that farmers would be well advised to devote more attention to the keeping of poultry under up-to-date methods as providing a profitable side-line to their other activities. This conference further pledges itself to support a measure in Parliament to provide for the compulsory marking of all eggs imported into this country."

FOOD PURCHASE SCHEME.

To the Editor of "Eggs."

Dear Sir,—On opening my "Eggs" yesterday, I was disappointed not to find quite a lot of correspondence on the Food Purchase Scheme. I hope this does not mean that members of the S.P.B.A. are not keen on it. Personally, I think the mere fact of having an expert buyer would be sufficient justification to go on with the scheme.

It would mean, at least, we should be sure of the quality of our feeding stuffs. I, myself, will certainly go in for a two-ton lot at a time.

Hoping that more influential members than myself will come forward. — I am, dear Sir, Yours truly,

W. J. DRAY.

Some Fruit-Growing Notes

to help Poultry-Keepers.

By F. W. WHEELER, F.R.H.S.

REPLY TO "WHITELANDS." From the br
description you give me of your land, I see no reas
why you should not successfully plant fruit tre
You may require extra manuring after a few yea
and according to number of birds running to the ac
You do not give the nature of the top soil, so I cann
advise fully. It is a very important point, and I
certain that you will obtain the best advice if y
consult the "Agricultural Organiser," for yo
County Agricultural Education Office, Canningt
Court, Bridgwater. I have always found the
Government officials most ready to help.

I think your nearest Research Station is Long As
ton, near Bristol, and the Principals of these Colleg
are always willing to advise on local conditions.

With eighteen months of good soil over the chalk y
should be able to do well with "bush" fruit trees, a
this type on dwafting stock would come into profita
bearing more quickly than the half standard or t
standard.

You will remember that I have often stated th
when the poultry are to be kept continually under t
fruit trees, the last two mentioned are the better p
position, but I gather from your letter that with yo
available land, you can have alternative runs, and
turn the birds out for certain periods of the year. T
would, of course, allow you likewise to grow a certa
amount of small fruit, such as currants and goo
berries, planted in between the bush fruit trees. P
sibly your ground is not of a sufficiently moist natu
for black currants, so red would be better.

Without seeing the place it is difficult to speak w
certainty, but I think I should in your case be
clined to plant some bush trees and also half standar
for it is very probable at some periods you will requ
to keep some birds continually running under the tre

You are certainly acting wisely not to start planti
before next November. Undoubtedly that and Dec
ber are the very best months, and instead of a
hasty spring planting you will have good time to stu
conditions essential to success, carefully to make yo
plans, obtain estimates of costs, to select and or
your most suitable variety of trees well in advance
planting, and also to prepare the sites.

It also occurs to me that you may have, on yo
exposed position, to plant a protecting wind-screen
trees or hedges, or both, in which case the question
plums or damsons should be considered, instead
Lombardy Poplar, Austrian or Scotch Pines, commo
used for this purpose, because the fruit trees mig
serve a double purpose, and can often be used for wi
breaks.

If I can deal more fully with other points on wh
you may require help I shall be pleased to do so
some future date.

Market Report.

INISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, 20th FEBRUARY, 1925.

GRAIN AND FEEDING STUFFS.—English wheat is more ly offered, and, with a slow demand, is considerably cheaper all centres, the average price over the week for the markets ted being 13s. 8d. per cwt. for good milling samples, gainst 14s. 2d. last week. Imported wheat is in quiet request lower quotations and at Liverpool prices record a reduction about 7d. per cwt. Only a small trade is passing for both e-grown and imported barleys and all descriptions are re- ed in price. Oats are in little demand, and quotations have easier tendency. Maize is in ample supply and cheaper, now averages 10s. 9d. per cwt. as compared with 11s. 3d. veek ago.

arse middlings are freely offered and, with a dull trade, are aper at all centres, averaging £9 4s. per ton as against £9 12s. the previous week. Imported pollards are also reduced at stol and London. Meals mostly sell at recent quotations, maize meal and maize germ meal, in sympathy with the line in maize prices, are easier. Imported cotton seed cake n large supply at London, and values have declined 2s. 6d. 5s. per ton on the week.

MILLERS' OFFALS.—Bran (British): Bristol, £9 7s; Hull, 2s; Liverpool, £9; London, £8 15s. Broad Bran: Hull, £9 12s; don, £10. Middlings--Fine (Imported): London, £10 15s; Coarse itish): Bristol, £10 5s; Hull, £9; Liverpool, £9; London, £8 10s. lards (Imported): Bristol, £8 7s; Liverpool, £7 17s; London, 10s. Rice Bran: Bristol, £10; Liverpool, £9 2s. MEAL.—Barley l: Bristol, £13; Hull, £12 17s; London, £13 10s. Maize Meal: stol, £12 15s; Hull, £12 2s; Liverpool, £11 17s; London, £11 12s. ize Meal (S. African): Hull, £11; Liverpool, £11 7s. Maize m Meal: Bristol, £12; Hull, £10 15s; London, £10 5s. Maize ten Feed: Bristol, £12 5s; London, £10 15s. Locust Bean Meal: stol, £9 10s; Hull, £9 10s; Liverpool, £10; London, £9 15s. n Meal: Bristol, £14; Hull, £13 8s; London, £13 15s. Fish l: Bristol, £21; Hull, £20; Liverpool, £19 10s; London, £21.

EGGS AND DEAD POULTRY.

Eggs are again easier in price and a quiet but steady inquiry experienced. In the dead poultry markets improved prices realised for fowls, while recent quotations are held for ks, geese and turkeys.

Week-end Prices—Eggs (per 120): British, 20s 0d, 18s 6d; Irish, 6d, 18s 3d; Danish, 20s 6d, 18s 6d; Dutch, 19s 9d, 18s 6d; Styrian, 3d, 13s 3d; Belgian, 18s 0d., 16s 9d; Italian, 15s 9d, 14s 3d; ptian, 9s 6d. 9s. 0d.; Moroccan, 10s 3d, 9s 3d; Argentine, 13s 6d, 0d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 8d; Irish, 6d, 1s 2d; Others, 1s 8d, 1s 5d. Ducks, 1s 8d, 1s 2d. Geese, d, 1s 0d.

EGGS.

Per Doz.—Ashford: First, 1s 11d; Second, 1s 9d. Birmingham: st, 2s 0d; Second, 1s 9½d. Bridgwater: First, 1s 10d; Second, 9d. Carlisle: First, 2s 0d; Second, 1s 9d. Chelmsford: First, 0¾d.; Second, 1s 9½d. Derby: First, 2s 4d. Dorchester: First, 7½d. Exeter: First, 2s 3d. Hereford: First, 1s 9d. Ipswich: st, 2s 0d; Second, 1s 6d. King's Lynn: First, 2s 0d; Second, d. Lincoln: First, 2s 3d. Llandilo: First, 1s 6d. Mold: First, d; Second, 1s 10d. Newport (Mon.): First, 2s 0d; Second, 1s 11d. wich: First, 2s 3d. Oswestry: First, 1s 7d; Second, 1s 6d. zance: First, 1s 7d; Second, 1s 6d. St. Ives (Hunts): First, ½d; Second, 1s 8½d. Salisbury: First, 1s 10½d; Second, 1s 9d. ewsbury: First, 2s 0d; Second, 1s 10d. Skipton: First, 2s 5d. ro: First, 1s 7d. York: First, 2s 5d; Second, 2s 3d.

FOWLS.

Per lb.—Birmingham: First, 1s 6d; Second, 10d. Derby: First, 6d; Second, *3s 0d. Exeter: First, 1s 6d. Hereford: First, 5d. Ipswich: First, 1s 7d. Lincoln: First, *5s 6d; Second, 0d. Llandilo: First, 1s 7d; Second, 1s 4d. Newport (Mon.): t, 1s 8d; Second, 1s 4d. Shrewsbury: First, 1s 5d; Second, d. Truro: First, 1s 5d. York: First, *5s 6d; Second, *4s 6d.

DUCKS.

er lb.—Birmingham: First, 9d; Second, 8d. Exeter: First d. Hereford: First, 1s 4d. Ipswich: First, 1s 6d. Llandilo: t, 1s 7d; Second, 1s 4d. Newport (Mon.): First, 1s 6.

* Per Head.

NOTICE TO ADVERTISERS.

ing to the ever-increasing circulation of "Eggs," it is rative that new advertisements and alterations are received IRST POST ON FRIDAY MORNING to ensure insertion in the wing Wednesday's issue.. It is hardly necessary to add that earlier in the week we receive copy the better it is for every- concerned.

PROOFS.

e cannot guarantee to submit proofs unless com- e copy is to hand by FIRST POST ON THE NDAY PREVIOUS TO THE FOLLOWING DNESDAY WEEK'S ISSUE.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, February 25th, 1925.

CONTENTS.

EDITORIAL ... 125
MODERN POULTRY FEEDING ... 126
ANSWERS TO QUERIES ... 127
POST-MORTEMS ... 130
THE INTERNAL MECHANISM OF THE EGG-LAYING MACHINE ... 131
SANITARY SCIENCE AS APPLIED TO POULTRY FARMING 132
YORKS. FEDERATION LAYING TEST ... 133
SIXTH MIDLAND LAYING TEST ... 133
S.P.B.A. ... 134
CORRESPONDENCE ... 135-137
SOME FRUIT GROWING NOTES ... 138

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94. Farncombe Street, London, S.E.16. Telephone HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

SPECIAL NOTICE.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

"DAILY MAIL" EGG LAYING TEST OF FIRST-CROSS PULLETS, 1924-25.

Report for Fourth Month—10th January to 6th February, 1925.

The weather conditions during the fourth period were much more favourable to egg production, and the season's rise made further progress—the tally of eggs for the month reaching 12,124, and giving a satisfactory average of 17.22 eggs per bird.

All the pens are now doing well, and although no pen put up a sensational score, what is far more satisfactory to report is the general high level of production of nearly all the competing pens. only 17 out of the total of 101 failing to record 100 eggs or more during the month.

Up-to-date Section 1 (White Leghorn x White Wyandotte) has the highest average with 310 eggs per pen, and this is followed by Section 3 (any other 1st cross) with an average of 293 per pen.

The eggs laid continue to be good in size—the percentage of first-grade eggs for the month being 86.8—and a reference to the production tables will show that the undersized eggs are mainly confined to individual pens, and it may be mentioned that in most instances these are little below the standard weight.

Eleven birds were broody during the month as against ten last month. The health of the birds continue to be excellent.

J. N. LEIGH.

Egg Production of Leading Pens (Seven Pullets). Figures are Eggs and Points to date respectively.

Section 1. White Leghorns x White Wyandottes.—F. W. Barley, 540, 521; H. Sutton and Sons, 445, 436; G. H. Hargreaves, 428, 424; James M. Abbott, 430, 416; Walter Crabtree, 411, 402.

Section 2. Black Leghorns x Rhode Island Reds.—J. Ashworth, 448, 438; M. E. and A. Robinson, 464, 438; P. K. Berry, 449, 421; G. B. Metcalfe, 396, 387; Capt. W. Owen. 396, 371.

Section 3. Any Other First Cross.—H. D. Barley, 503, 483; Mrs. W. Crabtree, 490, 474; Walter Crabtree, 474, 460; Edward Watkins, 408, 407; Frank Martin, 420, 389.

Section 4. Any Cross showing Sex-Linked Inheritance.—Hugh Sowerby, 439, 416; P. E. White, 468, 395; E. J. Thorpe and C. Correll, 452, 383; A. Mansell, 470, 378; R. Charles Hall, 353, 345.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS,	per line.	extra	9d.
DAY-OLD CHICKS,	,,	,,	1s.
DAY-OLD CHICKS	,,	,,	1/6

The number of letters, punctuations and spaces between words should be totalled, when the folowing table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount. will not be inserted.

Advertisement must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words; i.e., making a total extra charge of 1s. 8d. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office

FIRST POST FRIDAYS

for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY. AND TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. **BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS,** for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent. and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

EGGS.

FOR SALE.

White Leghorn Eggs; 7s. 6d. per 15, N.R. Every bird trap-nested. Also White Wyandottes and Rhode Island Reds—G. B. Tootall, M.S.P.B.A., Thorncliffe Poultry Farm, Barrow-in-Furness.

LIGHT SUSSEX AND R.I.R. EGGS.
From trap-nested parents; 12s. 6d. and 8s. 6d. doz. Catalogue.—Beard, Bleasby, Notts.

No more chick feeding troubles

Discard dangerous and difficult feeding methods.

Adopt the FUL-O-PEP way with FUL-O-PEP Growing Mash fed dry and straight from the red striped bag.

Chicks eat just what they want exactly when they want it—yet they cannot overeat.

You cannot go wrong. There is nothing to mix—no messy pots or pans to clean—no worry of visiting the chicks regularly every two hours—no anxiety—the whole day long is clear.

Just one visit a day only—one hour before "roosting" time, and the chicks thrive as never before.

FUL-O-PEP Growing Mash is renowned the world over for producing wonderful quick sturdy growth and for warding off White Diarrhoea.

FUL
TRADE -O- MARK
PEP
GROWING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE

For complete information on this vital subject. write for the revised edition of the FUL-O-PEP Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

This book has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Made and guaranteed by Quaker Oats Ltd., 11, Finsbury Sq., E.C

EGGS.

FOR SALE.

Prize Pen Barnevelders, White Wya
dottes, White Leghorns, Fawn and Whi
Runner Ducks, Black Runner Ducks. A
the best laying strains procurable. A fe
sittings can now be booked. Correspo
dence invited. — A. Hudson, The Flat
Kirkby-Thore-by-Penrith, Cumberland.

Prolific Large Strain of Light Susse
White Wyandotte and White Leghor
reared at high elevation; 8s. for 15, u
fertiles not replaced.—S. Hartley, Watki
son Hall Farm, Illingworth, Halifax, York

R.I.R. Eggs from selected pen; good la
ing strain; 5s. dozen; incubator orders su
plied.—Joseph Alty, Sandy Lane. Mawdesle

White Wyandotte Eggs, 2¼ozs., 6s. p
doz.; 45s., 100. Cam's Extra Special Pens
and II. Mating. Particulars on applica
tion.—Miss F. Tinkler, late Caunton Vica
age, Newark.

Light Sussex Eggs, Lister's strain; 6s. 6
dozen.—Morris, Gate Farm, Battle.

Free Range Eggs for Sitting. White Le
horns, Houdans, Silver Campine. Golde
Buttercups. Mating List free.—C. Woo
M.S.P.B.A., The Limes, North Luffenhan
Stamford. Lincolnshire.

White Leghorns. Sittings of Eggs, 6
dozen, delivered; 5s. locally; no replac
ments. From hens selected from flock c
1,000; mated to Baldwin's cockerels fro
200-egg dams.—Apply, Manager, New Sa
perton Poultry Farm, Heathfield, Sussex.

Eggs for Incubating from fine flock c
Goldens' and Measures' R.I.R.'s; pric
£2 10s. a 100. Other breeds kept: W.W.'
L.S., Anconas, and Houdans. Send fo
catalogue.—Gardner. Aldington, Kent.

Light Sussex, Bostock Smith's strai
Eggs from pen of trap-nested hens, wit
202-egg average for their pullet year; mate
to cockerel whose dam laid 242 eggs in he
pullet year. Price 6s. 6d. per dozen, or 1
—L. K. Hall, M.S.P.B.A., Littlehatch, Penn
Bucks.

Eggs for Sitting. R.I.R., Light Susse
and W. Wyandottes. Best strain
Numerous awards; 7s. 6d. for 15, carriag
paid; unfertiles not replaced. Mammot
Bronze and Austrian White Turkey Eggs
30s. doz.. carriage paid; March and April.—
E Upson, M.S.P.B.A., Riddens Farm, Fiv
Oaks, Billingshurst. Tel.: 13 Slinfold.

Pure-bred Light Sussex Eggs; 4s. 6d. fo
15.—Bardleden, Smarden, Kent.

Eggs from splendid laying strains. Whit
Leghorns, White Wyandottes, and R.I.R.
6s. dozen; £2, 100.—Mrs. Higginson, Stan
wardine, Cockshutt, Ellesmere.

LESLIE WILLIAMS' WYANDOTTES.
Sept., 1924, delivery; good sized typica
hens; mated to cockerel which cost £7
All from above. Few eggs now to spare
10s. 6d. per dozen. Other hens, wit
Williams' cockerel; 7s. 6d. per dozen.—E
Hind, 27, Babbington Lane, Kimberley
Notts.

ANCONAS.
Large Darracott, 1923 Hens, mated t
Mason's cock; large eggs; sittings, 7s. 6d
doz.—E. Hind. 27, Babbington Lane, Kim
berley, Notts.

HATCHING EGGS,
From reliable High-Class Utility Stock
Buff Rocks, Bilsborough, Bland-Harriso
Bell; W. Wyandottes, Cam's. Snowden; 7s
6d. dozen; satisfaction assured. — Chas
Cadman, M.S.P.B.A., Sidbury, Bridgnorth

WHITE WYANDOTTES.
Trap-nested. Large eggs.
7s. 6d. DOZEN, 55s., 100.
—Brett, Hangerlea, Bishop's Stortford.

BUFF LA BRESSE.
Eggs, 10s. doz.; splendid new variety
good layers and excellent table birds; ver
hardy and easy to rear. Satisfactio
guaranteed.—H. Craven, Elstree. Herts.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, MARCH 4th, 1925.

Editorial.

COMMUNITY POULTRY FARMING.

ome weeks ago we published particulars of the k Poultry Community, established in Canada by G. W. Miller. This article interested several of readers, and one of them who has been in com- nication with Mr. Miller has received the follow- letter, which we have his permission to publish:—

"Dear Mr. D ——. Your card received, and your questions in regard to five-acre poultry farms noted.

You must remember that we do a lot of things much differently over here than what you do in England; that much depends on the management and environment of poultry farms as to the number of fowls that may be kept to the acre, etc. In California up to 5,000 layers to the acre are successfully kept, and have been for years. Poultry Commissioner Francis, or Professor Edward Brown can give you a lot of information on this point.

As far back as 1907 I was interested in a farm where 4,500 layers were kept to the acre, and the necessary young stock raised to replenish the laying houses year after year. The correctness of this would be vouched for by the "Farm Journal," the largest and one of the oldest agricultural papers in America, so that there is nothing novel or untried about our community farm, at least as far as the number of hens to the acre are concerned.

Now let me make a suggestion. England is practically the only egg-importing country in the world. Why? Not because she does not eat as many per capita, but because she does not produce as many per capita. There is no good reason why she should not. You can buy poultry feed as cheaply as we can, your labour costs are lower, and your market is right at your door. The reason you fall short is, I believe, because you do not sufficiently intensify. You can keep 2,000 ayers to the acre as well as we can if you adopt the correct methods. A few communities such as ours in England, would help to solve your abour problem, and go a good way in keeping at home the money you now send to foreign countries or eggs."

Mr. Fred Fielding in his articles on poultry farming in California has told us the conditions which prevail there, and what he has said confirms what Mr. Miller and others have said as to the number of birds kept to the acre. Some months ago we drew attention to the statements made by Mr. P. A. Francis at Bedford, when describing his experiences during his tour in the States and Canada. It has always been a matter of wonder to us that the speech, with all the lessons it taught, was received with such apathy, more especially at a time when there are so many pessimists among poultry-keepers. However, it is useless to dwell on that now, although we have always urged that it would be well worth investigating the reasons, why in California, where feed, land, labour, and markets give no greater advantage to the poultry farmer than here, he should be able to carry on his occupation prosperously, while here he has to struggle to make both ends meet.

Mr. Miller offers Community Poultry Farming as a solution. Whether he is right or wrong it is impossible to say. We note that he says that there is nothing novel or untried about the Community Farm, at least as far as the number of hens to the acre is concerned. Presumably the Community itself is so far "untried." and we have to see yet how it will behave when it is tried. We cannot recall any such experiment in this country.

Mr. Miller speaks of 2,000 layers to the acre, and affirms that one of the causes of our failure to keep the home market supplied with eggs, is that we do not intensify enough. We wrote a series of articles on this question some months ago, and pleaded for a further investigation of the intensive system, which we consider has never been given a fair trial in this country. It is perfectly true that it failed after its introduction some years ago, but that failure was, to a great extent, explainable. The errors made may be amended, for we have yet to hear any sound argument as to why it should not succeed. The fact that it failed under conditions of which some of our readers are aware, is not proof that failure is inevitable. We know at least one farm where is has proved a success Indeed it stands a much better chance of success than do some of the farms which are now called "Semi-Intensive." The S.P.B.A. experiment will not be on a sufficiently large scale to enable us to draw any definite conclusions from the result, although it will be valuable as an indication of what may be done.

But the question of keeping anything like 2,000 layers to the acre will doubtless shock many of our readers. We are not suggesting that it is possible under the climatic conditions which we endure, but we have no definite proof that it is impossible. However, we are getting right away from the subject of Community Farming. Our correspondent is interested in this question, and recently endeavoured to interest others in a project for obtaining some 80 acres of suitable land, which was to be sub-divided into plots of ten acres each. There has been no "rush" to accept this offer, and he is naturally disappointed. Possibly he failed to realise that the acquisition of the land is not the only problem; homes have to be made, and the necessary capital to be found. Whether poultry farming is a sufficiently attractive proposition at the present time we leave to others to say. It is a sound enough investment provided you have brains, capital, energy, and aptitude; business capacity is included in the brains.

There are many advantages in Community Poultry farming, that we are bound to admit; but there is the chance that the community might, instead of communing together, argue with each other. Our correspondent may possibly have forgotten that it will not end in eight individuals splitting up 80 acres of land between them. He must show very clearly and explicitly what are the actual advantages to be gained, and he should be in a position to point out to those who are prepared to consider his proposals the actual amount of capital they would find it necessary to invest in order to obtain a decent living. The difficulty he will probably experience will be in finding the individuals with the necessary capital. There may be good reasons why such an enterprise should be successful in Canada which will not hold here. They are apart from the human factor which our correspondent suggests.

THE NATIONAL UTILITY POULTRY SOCIETY'S EGG-LAYING TEST, 1924-25.

Report for the Third Month—27th Dec., 1924, to 23rd Jan.. 1925.

During the third period of four weeks, and more especially towards its close, egg production improved rapidly, the daily collections rising from 750 eggs on the first day to 1,132 on the last day of the month. The total for the period was 26,563, as compared with 17,236 for the previous month. Much of this increase was brought about by the coming into lay of large numbers of the birds that fell into moult shortly after their arrival. Whatever may have been the main cause of the unusually heavy moulting, the season doubtless had much to do with it. for it has continued to affect fresh birds throughout the three months, and not been confined, as in previous years mainly to the first month after arrival, which would point to its being due on those occasions to the upset of the journey and change in environment. During the month 23 pens averaged 20 eggs or more per bird In last month's list of leading pens the Coaley Poultry Farm appears as owners of the first pen in Section 8, whereas it should have been Mr. Charles Prior, as shown in the detailed egg production tables. The heavy breeds, as a whole, did better again than the Light and the White Wyandottes, amongst the breeds strongly represented, headed the list of averages with 14.63 eggs per bird. Of the others represented by more than two pens, Buff Orpingtons and Buff Rocks did very well, with averages of 19.60 and 17.06 eggs per bird respectively. Amongst the heavy breeds 26 birds were broody, and of these 11 were light Sussex.

With the improvement in the weather, the birds have quite thrown off the troublesome colds that have been so prevalent this season, and the health of the flock is now very good.

EGG PRODUCTION OF LEADING PENS.

Figures are Eggs and Points respectively.

Section 1. Championship (Ten Pullets).—G. B. Metcalfe, 495, 494; Lady Seeley, 468, 453; Frank Snowden, 436, 435.

Section 2. White Leghorns (Five Pullets).—Fred W. Weeks, 285, 285; Sleights P. Farm, 238, 238; Mrs. A. E. Pallad, 236, 235.

Section 3. Black Leghorns (Five Pullets).—Lady Anderson, 285, 283; Roland Garrett, 216, 216; Mrs. M. E. Clay, 209, 209.

Section 4. Any Other Light Variety (Five Pullets).—P. K. Berry, 213, 212; H. R. Hunter, 196, 196; J. H. Thompson, 173, 173.

Section 5. White Wyandottes (Five Pullets).—G. Keith Simmons, 267, 267; A. K. S. Alexander, 263, 263; Bolton and Gardiner, 263, 263.

Section 6. Rhode Island Reds (Five Pullets).—Lady Dorothy Fraser, 274, 274; John H. Berry, 266, 265; J. B. V. and W. Cummings, 220, 220.

Section 7. Sussex (Five Pullets).—F. Rossall-Sandford, 275, 275; T. Brooksbank, 254, 253; Mrs. E. M. L. Knight, 217, 217.

Section 8. Any Other Heavy Variety (Five Pullets).—Miss Harrison Bell, 218, 218; A. A. Plimpton, 217. 217; A. M. Kemp-Gee, 211, 211.

The Internal Mechanism of the Egg-Laying Machine.

By **J. L. ROSEDALE.**

V.—RUNNING REPAIRS (Continued).

Fibre is a material which requires a little attenti as it is much beloved of poultry-keepers because it cheap. We have already stated on a previous occasi that by fibre we mean a material that cannot digested. Its food value is, therefore, nil, and it cheap in consequence! The presence of much fibre a diet is often defended by calling it bulk. What the bulk wanted for? The most evident use is assist in clearance of the gut by mechanical mea This is no doubt useful in cases where B. vitamin on the short side, but it must be remembered that is impossible to feed a fibre free diet even if we want to. Generally speaking, we rather want to keep do the fibre content of the ration, though with the hea breeds a higher content is necessary than with light breeds. The reason is that you cannot get ounces of food into a crop built to hold four ounc so that if the percentage of fibre is too high someth else may be short. If you have carefully added y proper proportion of protein, salts and vitamins, y energy value may become too low, or if the ene requirements are satisfied there may not rem enough carbohydrate to give enough fat for the e On the whole the fibre wants keeping low, and sho be altered from time to time according to perso observations of the birds. The importance of perso observation cannot be too strongly urged. It is the object of scientific research to lessen the need watchfulness on the part of the poultry-keeper. farmer who expects to be relieved of the necessity personal observation by studying the results of sci tific research will be a failure, but I believe that result of such study will be to make him still m observant.

We may ask whether any difference is desirable the management of our stock birds apart from th kept only to supply market eggs. It is, indeed difficult point for several reasons. No way of feed will turn a 160-egg bird into a 260-egg bird, but a h protein diet will hurry up the eggs at a time we w them. If the egg production is merely hastened not greatly increased it does not seem apparent t any ill-effects would accrue, though probably t depends on how long you propose to keep the b It might be more profitable to replace a bird that been forced at the end of the second year at lat Any way, it cannot be expected that a bird tha forced through the winter months is going to b profitable breeder right through the spring, and, deed, this is a very important matter with most flo If, of course, your flock average is high, it is not important as with a mediocre average.

Strain will do more than feeding in producing great layers. As one looks through advertisements is almost led to believe that everybody's birds lay

verage of 250 eggs a year. If their progeny do the
me we make the business pay all right without much
orry. But you have first got to hatch the progeny!
wo years ago I collected a good deal of information
ncerning hatchability, the main result of which was
e compilation of data which showed that on the
hole a high egg production resulted in a somewhat
ferior hatchability. Of course, after reading the
P.B.A. Register it seems a terrible thing to state in
iblic, but in poultry-keeping there are, as you know,
many exceptions to every "rule" that one really
onders whether there are any rules at all! What
are certain about is that before long we hope that
r 250-egg strain will become a 360-egg strain. If our
erage keeps up we may take it, I think, that our
orts have not caused a lack of stamina. On the
her hand, if we remember that the quality of the
g is so important in hatching, we must also realise
at a too rapid production of eggs may result in some
them having some sort of internal deficiency which
ll cause dead-in-shell. We must, therefore, be-
utious with breeding stock, and although we shall
ntinue to breed and to feed for eggs, we require to
even more particular in securing PROPER PRO-
RTIONS to breeding stock than to any other class
bird. Those proportions will keep them up to the
rk, and ensure, as far as possible, not only progeny,
t healthy progeny, which will go on improving our
ks and our profits.

inally, we must consider the points to be borne
mind when we want to fatten birds. Sometimes we
nt to fatten birds that have finished growing,
ugh generally our subjects have not completed
ir growth. While the rate of growth is hastened
a liberal and balanced protein diet, it has its limits
ich cannot be exceeded.

s we want weight, our object is to exceed the
ght of ordinary growth by increasing the amount
fat. It is quite normal for an animal to lay on a
ain amount of fat as it increases in age. When a
ng animal is analysed the water content is high.
it grows the proportion of solid matter to water
eases. On a fat free basis, however, the percen-
of protein and ash remain pretty constant, and
solid matter which replaces the water is mainly

he cheapest way to increase fat by feeding is to
carbohydrate. This is a straightforward proceed-
when the subject has finished growing, as all we
e to do is to feed the carbohydrates—as much as
be got down—and to take care that as little as
ible is used up for the purpose of energy. With
ung bird we have other considerations.

at is lighter than water and protein, therefore, to
full weight from the bird we want it to continue
ving in the true sense, and only to put on fat as
xtra. There are then two problems before us:—
How fast can a bird be made to grow? and (2)
much extra fat can he be made to put on while
growing? You see we don't want to follow nature
than half-way. We want an abnormal product,
we have to keep only one idea before our minds,
ely, weight. These two demands might seem
sed to each other, as high protein is required for

quick growth, yet carbohydrate gives the cheapest fat. Physiology, however, again comes to our aid. Fat can be formed from protein by the body. Theoretically therefore, we should adopt a high protein diet, though experiments will have to be made to teach us how far the theory will go hand in hand with financial soundness. That is the most far-reaching and important problem that there is connected with the whole business of fattening. It is important because, if we thoroughly grasp how to fatten, we may incidentally learn how not to fatten! This last is much more important than many people think, and it is especially so with the heavy breeds. Study of this point is an important link in the chain of cheaper feeding.

To return once more to the fattening problem, we must bear in mind that we require the highest weight in the shortest time, so that we must reduce the fibre as much as possible, and use a carbohydrate which has as small a starch grain as possible. The oat is a good carbohydrate from this point of view of the starch grain, but its fibre is excessive. There is one more point, namely, balance of the essentials. It will probably be found difficult to ensure this completely in fattening, but we may console ourselves on this occasion by the fact that we are trying to produce a physiologically abnormal animal whose days are numbered.

EAST ANGLIAN EGG-LAYING TEST.

Report of Third Month—11th Dec., 1924, to 7th Jan., 1925.

In spite of the inclement weather experienced during the four weeks comprising the third month of the test, the eggs recorded rose from 1,368 to 2,183—an increase of 715.

Many of the birds which fell into moult have again commenced production, and it is confidently expected that the increase in the output will be well maintained during the fourth month.

The percentage of first-grade eggs laid during the period is 62.4, which compared with 70.3 the previous month, clearly shows how the 2oz. egg affects the general standard. It also emphasises the necessity when sending birds to a test to select those which are nearing the productive stage. The advantage gained by having the birds laying in the first eight weeks, when the weight of eggs is less, is a real one, as those coming into lay after that time have to produce from the start an egg weighing 2ozs. to count first-grade. It will readily be seen that many second-grade eggs produced by birds commencing to lay during the third month would in the earlier weeks have reached the weight for first-grade; and it is mainly due to this that the fall in the percentage has occurred.

The total number of eggs laid to date is 4,932.

The greatest number of eggs laid by any pen during the four weeks was 99, by Mr. Turner's R.I.R.'s. At the end of the third month this pen also has the distinction of having laid more eggs than any other pen competing. The highest individual score made was 27 by a Buff Orpington belonging to Mrs. M. Crooks, but of this number 23 just failed to reach the first-grade weight.

The health of the flock is excellent.

W. T. WILLIAMS, Hon. Secretary,
Millfields, Rayne, Essex.

The following are the Eggs and Points to date:—

Section 1. White Leghorns.—Dale Egg Farm, 187. 187; Capt. Wheeler, 110, 108; Allen Bros., 140, 105.

Section 2. Any Other Non-Sitting Breed.—Miss E. Cavanagh (Ancona), 150, 150; Major E. Lloyd-George (Ancona), 132, 126; T. R. Berry (Sicilian F'rbirds), 26, 26.

Section 3. White Wyandottes.—Mrs. Pierce-Grove, 181, 181; General R. L. Mullens, 169, 166; S. and T. Greenall, 151, 150.

Section 4. Rhode Island Red.—H. Turner, 276, 276; E. Fearon, 217, 207; Hasler and Co., Ltd., 222, 188.

Section 5. Any Other Sitting Breed.—Misses D. and M. Keech (L.S.), 185. 175; F. D. Montgomerie (Bf. R.), 52, 52; T. H. Sochon (L.S.), 169, 169.

Section 6. Single Bird. Any Variety, Light Breed.—W. S. Lane (W.L.), 59, 59; Miss P. Abercombie (W.L.), 58, 58; F. C. Tomlinson (W.L.), 53, 53; H. Deardon (W.L.), 52, 52; Dale Egg Farm (W.L.), 59, 51.

Section 7. Single Bird. Any Variety, Heavy Breed.—Greensward Poultry Farm (W.W.), 49, 49; Mrs. M. Crooks (B.O.), 72, 47; E. Fearon (R.I.R.), 42, 39; Hasler and Co. (R.I.R.), 37, 37; Mrs. Pierce-Grove, 36. 36.

Note.—Five Pullets constitute a pen in Sections 1—5.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

Airdoun (West Bromwich) has lost a lot of chicks, and the mortality he attributes to the feed. He sends a sample which he thinks has caused the mischief, but I cannot detect anything wrong with it. There are no signs of mould, and the only complaint to make is the very excessive amount of millet; but this, although I should expect it to cause digestive trouble, would not occasion the high mortality of which my correspondent writes. If he had told me any symptoms I might have been able to make a suggestion, but as it is I cannot help him. In answer to his second question, as repeatedly pointed out in these columns, there is no sex-linked cross with the White Leghorn by which the sexes can be distinguished at hatching; and if he wants a Light breed male to mate with his White Wyandottes to give chicks, the sex of which can be distinguished at hatching, he should try a Buff Leghorn.

Gameater (E. Yorks) wants a good laying and table cross, and asks what is the best male to mate to his Light Sussex hens to give a really good table fowl. For his purpose I can recommend nothing better than the Houdan male. This will give a table fowl of the highest quality, quick to mature, while the pullets will prove good layers of large eggs. If hatched late in March or early April, they will supply the October eggs he wants if properly managed. In answer to his second question, as to why his Wyandotte hens which lay good-sized eggs, and were mated to a sire from a large-egg dam, bred progeny a large percentage of which laid small eggs, I will have to answer this at another time, as space will not permit me to do so here.

Devonian (Tavistock) complains that his Le horn pullets, which started off by laying good-siz eggs, are now laying very small ones, and not t many at that. If he had sent me particulars his feeding it would have been possible to ha given a definite reason; now I can only sugge I think he is underfeeding; it may be in quanti or it may be that the bulk of the mash is too gre This he must now judge for himself, and al accordingly. My impression is that the pulle started to lay well, because they were in a co dition to lay; now, as the result of underfeedir they have drawn too heavily on their bodily serves, and so we have eggs few and small. other trouble is delayed hatching. In his hot- machine the hatch did not begin until late on 21st day, and the chicks are small and weak He followed maker's instructions. This wo appear to be a case of too low a temperature. suggest that he ignores maker's instructions, sta the machine at 105 first week, 104 second, 103 third, keeps both felts in until the 19th day, th removes only one, and also has his thermome tested.

M. C. (Hereford) has three Leghorn pullets wh have gone off their legs. They are all good lay and, except for this trouble, look in perfect c dition, the comb being very bright and the also. The indications are "layer's cramp," wh is a purely nervous trouble, the bright comb a eye being just as described by "M.C." Keep birds perfectly quiet on a bed of soft hay, s mash feeding, and give a mild dose of Epsom sa cooked rice will be the best feed, and plenty fresh green food. If there are always colds the house—he merely says it is a "lean-to," does not describe—it must be because the ve lation is faulty.

J. G. (Suffolk) is in great trouble. The perc age of fertile eggs in his pen of Light Susse lamentably small; the cockerel came from a w known breeder and is a February-hatched b Now "J.G." asks if we (or he) cannot be tected against this sort of thing, and wants to kn if he has any claim against the breeder. But w we probe a little more deeply we find that i highly probable that it is "J.G." who is to bla and who needs protection against himself, as almost certain that his birds are in an over-fat dition, and this is a frequent cause of inferti To keep a breeding pen in a small colony hous a small earth run, especially such a breed as Sussex, is not conducive to high fertility. He have to get the birds into condition by provi plenty of scratching exercise. He would be advised to omit the maize from the mash, re the biscuit meal to one part, and add another supers. As the grain give only good oats, and they have to scratch for it. In answer to second question, I think he would find the Buff a much more profitable bird to keep than Sussex under his conditions.

). S. (Wem) has a Rhode I. Red chick "blown like a balloon," and wants to know the cause d the cure, and whether I would like a photograph the chick. No, thanks, "D.S.," such cases are t uncommon. The chick is suffering from mphysema," a condition caused by some ection of the lungs, and the escape of air into intra-muscular tissues. You can relieve the ck by puncturing the skin and letting out the ; but I have never found such chicks worth keep- r. The fundamental cause, I believe, is too close atmosphere in the brooder.

. R. (Newcastle) writes:—"I found this piece meat in an egg laid by one of my Leghorn lets; can you tell me how it got there?" The iece of meat," "A.R.," is congealed blood. It not so uncommon as you suppose. When a hen laying heavily the ovary is fully charged with od. When a yolk sac ruptures to release a yolk, en a blood vessel in the sac is ruptured, be- nes incorporated in the yolk, and thus you get n your egg. The one unusual thing about the ce you sent was the size; I have only seen one ce bigger. In answer to your second question, hink the whole of the trouble with the chicks is to the peat moss litter; this is too dusty, and causing irritation of the respiratory organs and eyes. The sample of ground oats is a very d one, not Sussex ground, but equally as good; slight diarrhoea with the hens I think is due the fish meal, which contains an excessive ount of oil. If you continue to use it you are ly to have serious trouble.

---

hips (Brigg) sends a dozen unhatched eggs. It curious that a similar lot was received from ther source. Examination reveals that all the ks died about the 15th day. One cannot attri- e this to excess of moisture, and the only con- sion to arrive at is that the vitality of the embryo lowered by too low a temperature in the early ges of incubation, or else the fault lies with the k birds. In answer to his second question, I ld not hatch Leghorn-Wyandottes after the dle of April

---

H. C. (Aston) is feeding as follows:—Dry h, made up of 1 lb. sharps, ½ bran, 3 S.G.O., falfa meal, 2 gluten meal, 2 meat meal, 2 maize l, and one charcoal, and asks if he is feeding t. In reply:—His feeding is unnecessarily ex- sive, and, as the mash is for egg production e, I would suggest that he makes it:—1 lb. ran, 1 alfalfa meal, 2 maize meal, ½ extracted bean meal, and ½ meat and bone meal or fish l. He should note that these parts are by ght, and the mash should be before the birds day. The grain feed he is giving is correct.

S. (Downham) sends samples of foods. The ls at 12s. 3d. are excellent value for the money, rior to the thirds at 10s. 6d., as one would expect; still the latter are good value for the money. The ground oats at 15s. 9d. are not "Sussex" ground, and there is a good deal of husk in them; but, at the price, they are fair value. The maize meal at 13s. is a good sample. Bran also is very good. I do not consider the fine offals at 12s. are in any way superior to those at 10s. 6d. On the whole, all the samples he sends are above average.

O. C. H. (Derby). If only you would read the articles on "Chicken Rearing," "O.C.H.," which have appeared in the last two issues of this journal, you would obtain all the information you want. I cannot spare space here to give you full details of the dry mash system of rearing chicks, and all that you require will be found in the articles mentioned.

A. B. C. (Chorley) has the following wonderful story to tell with regard to incubation. Ninety-three eggs were put in a new Gloucester incubator, which was the maximum number he could scrape together. He had great difficulty in keeping the temperature at 105 degrees during the first few days. This was due to the fact that the temperature of the incubator shed was very low. He had no thermometer to gauge this with. Had an attack of the "'Flu" and went to bed, and on the seventh morning at 7 a.m. found the lamp out and the mercury in the thermometer invisible and everything cold. He lighted up and tested the eggs on the 9th day, and found a precious few infertile. He left the lot in, got a friend to see to the lamp, turned four times a day, and went back to bed. On the 20th day, at 10 p.m., two chicks had made their appearance, and on the 21st day, at 4 p.m., he had hatched 78, in spite of all these wonderful difficulties. At present they are apparently all healthy. Well, "A.B.C.," I have heard some wonderful things in my time, and yours is perhaps not the least. Now we shall see how the chicks develop. Sometimes these sort of hatches promise very well for the first few days, but later the chicks crack up.

J. W. W. (Whittle-le-Woods) says:—"I am a regular reader of your valuable paper, and would be thankful if you would answer me a few questions in the above columns in your next issue." He gives as a definition of an L2 bird—one which lays over 30 eggs in a certain period of the winter months. I am afraid I cannot enter into all this here, "J.W.W.," as space will not permit; but you may take it as definite, that a bird which lays over 30 eggs in a certain period of the winter months is not necessarily L2, and the fact that she does so does not make her L2. Now with regard to your question. "Conversely, if a pullet hatched, say, in February, and laid in July, begins to moult in October, and does not lay again until after the winter months—can she not possibly be L2?" Well, you see the question does not arise, because L2 does not mean a definite number of eggs laid in a certain period. Yes, I quite understand what you mean by your second question, but you are quite mistaken that Pearl's definition of an L2 is one which lays 30 eggs in the period mentioned. With regard to the nursery-chick size which you mention. I have not had any personal experience of this, but reports are favourable. The question as to the ingredients in the breeders' mash is perfectly satisfactory, but I cannot sift it all out and work out the percentages.

"Tynesider" (Wallsend) asks for a reliable dry chick feed. He says he is a regular reader of "Eggs," finds weekly our paper both helpful and interesting. Then may I refer him to the two articles on "Chicken Rearing" which have appeared in the issues of the 11th and 18th, where he will find the answer he requires.

POST-MORTEMS.

A. B. C. The post-mortem examination of the chicks showed the cause to be B.W.D. The treatment for this infectious disease is eminently unsatisfactory, very few surviving—I won't say recovering—only to remain possible "carriers," and cause future outbreaks. I should advise the immediate destruction and cremation of the few remaining, followed by a thorough disinfection of everything that they have come in contact with. Infected incubators are a frequent source of infection, and should not be overlooked in the general clean up of equipment that is so necessary to prevent a recrudesence of the trouble.

F. J. H. The post-mortem examination of the chicks showed the cause to be Coccidiosis, in the case of the large one, and nothing beyond non-absorption of the yolk sacs in the two smaller. The non-absorption of the yolk sacs may be due to too early feeding, or to something far more serious, and I am only sorry that you did not send me more of the little ones to examine, as something more definite might have been discovered. Coccidiosis is, of course, infectious, and the affected birds should be prevented from mixing with others, as the disease is chiefly spread by the droppings fouling the ground, food and water. They should be placed in a freshly disinfected house, and the litter and droppings swept up and burned two or three times a week. Dissolve one dram of catechu in every three gallons of their drinking water, and keep them on this for a month. The flock from which the small ones came should also be isolated until it is determined whether the trouble is infectious or not. The runs should be disinfected, either by turning over and liming, or by watering with a one per cent. solution of copper sulphate. Any of the proved commercial disinfectants are suitable to disinfect the houses and equipment with.

H. H. G. There were no distinctive lesions to be discovered, but from your account of what has happened, I strongly suspect B.W.D., as this is the type it is taking just now—death without post-mortem signs. Of course, it means that the disease, for some reason or other, has assumed an acute form, and kills by toxaemia before lesions have time to develop. Would you kindly send me about six more, and if nothing can be seen in them, I will make a bacteriological examination, which will decide one way or the other. In the meantime it would be wise to treat this trouble as if it had definitely been proved to be infectious, and to isolate these birds, disinfect the equipment, and take every precaution not to carry any possible infection to others by hands, boots or equipment. The expected chicks when they arrived should be divided up into small lots as soon as they are removed from the incubator, which should be done at the earliest possible moment, and placed in freshly disinfected quarters. If trouble should appear then it would be less likely to spread to the whole hatch, and would be easier controlled.

BOARD OF AGRICULTURE FOR SCOTLAND EGG-LAYING TEST, 1924-25.

Report for the Third Month—10th Dec., 1924, to 6th Jan., 1925.

During the third period of four weeks the weather was ver variable, cold boisterous winds, rain, frost, and snow alternating The sudden changes in the atmospheric conditions were not a all favourable to high egg production, and at times necessitate total confinement of the birds. In spite of the weather condition the health of the birds remain satisfactory. Prevalence of moulting has also been against egg production. 36 pullets and 28 duck being affected. It has been most in evidence in the Duc Section and among White Leghorns and White Wyandottes, onl one Rhode Island Pullet being among the number affected.

The Cup presented by the Scientific Poultry Breeders' Association for the best score during the first three periods of the tes has been won for the year by Mr. James Prentice, Loancrof Poultry Farm, Uddingston, owner of pen No. 46 in the Whit Leghorn Section, which has to its credit a total of 350 eggs, wit a score value of 348. It should be noted in connection with th competition for this cup that not more than 60 second-grade egg are allowed to count towards the score value. Figures are Eggs an Points respectively:—

SUMMARY OF LEADING PENS.

Section 1. White Leghorns.—Jas. Prentice, 350, 348; J W Dobbie. 316, 309; J. and W. Purdie, 293, 292.

Section 2. White Wyandottes.—W. Bradbury, 353, 348; R. A Oliver, 265, 263; R. Prentice, 291, 250.

Section 3. Rhode Island Reds.—H. P. F Roche, 292, 290; J. A Terrace, 349, 271; Mrs. Logan, 284, 247.

Section 4. Non-Sitters, other than White Leghorns.—Joh ston Jackson (B.L.), 241, 239; R. Scott Miller (B.L.), 202, 202; A Watson (B.L.), 192, 192.

Section 5. Sitters, other than R.I. Reds and W. Wyandottes.— J. Adams (B.R.), 333 333; O. C. Brown (B.R.), 264, 264; Mrs. Craig (Barn.), 148, 148.

Section 6. Ducks.—H .S. Godsmark (W.R.), 272, 227; Mi Harrison Bell (K.-C.), 162, 162; R. A. and A. M. Johnson (W.R. 109, 108.

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIE

Third Annual Laying Competition, held at the Lancashi County Council Farm, Hotton, under the supervision of Mr. H. Dobbin, the County Poultry Instructor.

Fourth Month's Report—8th Jan. to 4th Feb., 1925.

The following are the leading positions in each station, sho ing number of Eggs and Points for the Four Months:—

Section 1. White Leghorns, Large Breeders (Three Birds).— E. Cam, 207, 1606; R. Beesley, 191, 1,444; W. Hamnett, 186, 1,436; C. Harrison, 195, 1,412; J. Booth. 190, 1,372; W. Barron, 175, 1,254.

Section 2. A.O.V, Light Large Breeders (Three Birds).— Rawlinson. 183, 1,278: W. Hamnett, 90, 666; T. W. Gardner. 95, 65 Mrs. J. H. Hill, 65, 494: F. Lord, 74, 470; G. E. Leigh. 55, 422.

Section 3. White Wyandottes, Large Breeders (Three Birds).— P. Williamson, 209, 1,582: C. Bates, 203, 1,568: J. R. Dawson, 20 1,542; W. Barron, 226, 1,432; W. Hamnett, 179, 1,372; R. Bradle 184, 1,240.

Section 4. Rhode Island Reds. Large Breeders (Three Birds).— F. Harvey, 199, 1,500; A. T. Walker, 187, 1,362; G. Cobham, 20 1,264; W. Weardon and Sons, 170, 1,244; T. Braithwaite, 154, 1,22 —. Basnet, 153, 1,206.

Section 1. Light Breeds, Small Breeders (Single Birds).— Stanley, 70, 558: W. Ashton, 65, 504; J. A. Wolstenholme, 66, 48 F. Wilkinson, 77, 478; W. Fletcher, 58, 442; O. R. Lees, 53, 412.

Section 2. Heavy Breeds, Small Breeders (Single Birds).— W. Pearson, 80, 620; H. Harrison, 71, 472; W. R. Robinson, 55, 42 A. D. Walton, 47. 356; J. Farron, 47, 332; D. Braithwaite, 39, 292

Scientific Poultry Breeders' Association.

ull particulars of membership will be sent by return on pplication to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

THE AUSTRALORP.

luch interesting reading is to be found in the
ır Book of the Australorp Club which has just
ched me, and if the Editress found, as she says
did, great pleasure in compiling it, then her
ders will share her pleasure.

'he President, in her message to members, em-
sises the need of increasing size of egg, a hint
ch members will do well to observe.

'he Secretary's report shows a decrease of 34
nbers. Mention is made of the fact that a
ple of Australorps won second prize in the table
ltry classes at the Dairy Show. Records in the
ng tests are: Mr. H. R. Parsons' pen with 1,056
s in forty-eight weeks at Bentley, Mr. Carveth's
for four birds in six winter months in the
nwall Laying Trials; Mr. Lloyd's pullet, which
259 eggs in 48 weeks in the Malpas Test.

is stated, and I think too often so, that some
ıres with the breed in this country are due to
different climatic conditions. I do not think
is the case. The same remark has been made
ut the Barnevelder. What is probably nearer
truth is, that in the scramble to get the birds
ıy inferior ones were imported. You cannot
ı across the seas and buy up stock wholesale
expect to find them all competition layers, a
e percentage of them will be duds. The same
arks were not made about the Padman Leg-
ıs when they were imported. Breeders of
tralorps and Barnevelders would be wise to
this assertion, it is only looked upon as an
ıse for failure.

am not a breeder of Australorps, and probably
r shall be, therefore any criticism of the stan-
l may be regarded as an impertinence, but I
hink that with such a breed the Club should
at a bigger bird, $4\frac{1}{2}$ lbs. for pullets on the
t of lay, and $5\frac{1}{2}$ lbs. for hens is very small. A
te Leghorn pullet on the point of lay will scale
bs., and often more, and there should be more
a pound difference between the breeds,
cially as the Australorp requires careful watch-
for size of egg. Having regard to the future
ıe breed, I should be inclined to add another
ıd to the standard weight. This could be easily
without causing it to be in the least coarse.
e are many interesting articles in the book,
h is 1s. 6d. post free to non-members.

PILE, DUCKWING AND CUCKOO LEGHORN CLUB.

The President, in his foreword, is able to speak of the increased interest taken in these breeds, and states that the Club show was really splendid. Mrs. Parke, who has kept Cuckoos for many years, speaks highly of their laying qualities, and the photograph of her winning cock at the Crystal Palace depicts a very handsome bird. As I shall be lecturing at Sturminster Marshall on the fifth of next month, I shall hope to see some of them. The president contributes two useful articles on the mating and breeding of Piles and Duckwings, while Mr. Ian Annesley writes "Some Notes on Duckwing Leghorns." Piles and Duckwings have still a certain number of followers, but they do not seem to increase. The Piles have now been before the public for some forty years, and originated from the mating of a White Leghorn male with a Brown Leghorn female. Later on, it is said, that Pile Game blood was introduced. The origin of the Duckwing is rather uncertain, Duckwing Game was probably used, and it has been suggested that the Silver Dorking and Brown Leghorn were also used; but I think this is purely a speculative opinion, at least as far as the Dorking is concerned.

LEG WEAKNESS AGAIN.

I have received the following interesting letter from Mr. Crump on this subject. He says:—

> "With reference to your article in the Register re leg weakness, perhaps the following may be of interest:
>
> I put 200 chicks on a wire-netting platform 3 inches high, covered with hay, under a Glevum hover on January 10th. I was surprised at the rapid growth and general fitness of the chicks up to three weeks of age, then all at once the leg weakness became bad and I lost fifteen.
>
> At my wife's suggestion I took six bad cases and placed them in a basin in strong salt and water. To our amazement they all stood up, and, after a minute or so, jumped out of the basin and walked to the hopper. I may say they all recovered; only two required a second dip, and, by moving the netted floor and replacing damp earth, the leg weakness stopped. I do not attribute it to the floor, as I have 100 in a brooder with netting 2 inches off the floor and only got two cases. I hope you will give me your opinion re the salt water being a cure; my wife cured three last year the same way, but I put it down to the sudden immersion in the cold water, but we tried cold water only without any effect."

Salt and water would be a very effective treatment in some cases where the weakness was due to the flabby muscle. Salt, it is unnecessary to say, is a fairly strong astringent. Cold water is also an astringent, and the same effect would have been produced had the chicks' legs been held under a tap for a sufficient length of time; but, of course, the salt and water is better. The question of interest is—what caused these flabby muscles? for in this case I think this must have been the condition. Probably insufficient exercise; that is the only suggestion I can make.

TEN WEEKS' OLD PULLETS.

A correspondent writes from Nottingham to say that he cannot understand why breeders do not cater for the large demand there is for the ten weeks' old pullets. He himself purchases 100 every spring; and he is certain that the breeder who can offer the public pullets at this age, at a reasonable price, will do good business. It is possible that it is so, but the question is, what is a reasonable price? It is hardly my business to say so, but frequently, in looking through the advertisement columns, I am struck by the number of advertisers who are offering stock at a price which cannot offer them the smallest return. I am sure they can never have calculated what it has cost them to produce, and that very few of them realise that they are selling at a loss. It is bad business, and it illustrates what is so terribly true, what a number of failures there are in our industry, because of the lack of the necessary business acumen. I cannot say whether there is likely to be a big demand for the ten weeks' old pullet or not, and I doubt whether my correspondent is in a position to say so. Is he basing his belief on his own requirements?

THE SCOTTISH LAYING TEST.

The Challenge Cup offered by the S.P.B.A. for the best winter record put up in this test has, I understand, been won by Mr. Jas. Prentice, of the Loancroft Poultry Farm, Uddingston, with a pen of White Leghorns.

Mr. Prentice's pen had the fine average of 58.3 eggs per bird for the winter period. This is the third year in succession that he has won First for the winter period in laying tests. His Leghorns have now won two Cups, 4 Gold Medals, and four First Class Certificates in Laying Tests—so that he has been a most successful breeder. One must say that, owing to the conditions of this test, the birds are severely tested. Although the housing and penning is all that could be desired, the situation is much exposed, therefore the performance of the birds is all the more creditable.

Menadews, St. Clements, Truro.

Dear Sir,—"Eggs" is packed full of information from cover to cover, and contains more practical information than any two contemporary journals.

Thanking you, yours faithfully,

(Signed) L. CHOAK.

Bees.

By E. W. D. MADOC.

RACES OF BEES.—I.

Amongst American honey producers the Itali
is a strong favourite, and has far more advocat
than all the other races put together. In th
country the Italian was forced upon our more co
servative bee-keepers as the only hope again
Acarine Disease, and now they have had some e
perience with this race, and are beginning to ado
suitable methods of management, many are real
ing its superiority.

While it is necessary for purposes of comparis
of the best known races to ignore differences
strain—that is, to assume that each race is rep
sented by one strain of average merit—it must
recognised that strain is of very great importanc
we may not assume that a stock of bees is go
because it is Italian any more than we can say
certain hen is a good layer because she is a Whi
Leghorn.

In addition to its ability to resist Acarine Diseas
the Italian is very resistant to European Foul Broo
and where infection has taken place this bee read
responds to treatment.

It is an excellent honey gatherer, and cannot
beaten for extracted honey production, but it h
the fault of capping the cells of honey, witho
leaving much of an air space between the cappi
and the honey, which tends to spoil the appearan
of comb honey.

Swarming is easily controlled when produci
extracted honey, but it requires skilful manag
ment to prevent swarming when comb honey
required.

Pure Italians are very good tempered and ea
to work with, the bees stay quietly on the com
during manipulation and the queens are easy
find; the worker bee may be recognised by t
presence of three orange-coloured bands on t
first three abdominal segments; bees with less th
these three bands are not pure Italians, althou
they may contain considerable Italian bloc
While the presence of the three bands may be tak
as a general indication of purity, it is not alwa
correct, because certain strains of Italians whi
have been bred for colour, known as Gold
Italians, have four or five bands, and these be
when crossed with English Blacks frequently p
duce a three-banded bee.

It is usual to find that home-reared Italians fr
imported queens are superior to their moth
whether they mate with Italian or English dron
the chief difference being that the cross-bred be
are generally inclined to be bad tempered, a
further, as is usual with hybrid parents, th
generally produce very inferior stock when br
from, and it is never advisable to breed from the

Continued at Foot of Page 149.

Correspondence.

LEG WEAKNESS.

To the Editor of "Eggs."

Dear Sir,—I should like to suggest that leg
eakness in chickens requires scientific investi-
tion. It was so disastrous to chicken farmers
st year that one hoped that the favourable
eather of this season would at least greatly reduce
e mortality.

But again it is with us, and in your journal one
es the usual causes repeated, and the obvious
eatments reiterated.

First, it is caused by lack of proper vitamines,
en "floor draughts," then "boarded floors,"
en "foul air in the hover," and so on. Then the
res are enumerated: "Watering the ground
ound the hover," using "Mr. Palmer's pud-
ngs" instead of dry mash, the "earthen floor,"
d finally "common sense systems." Poultry-
eping with me is a hobby, but as a medical man
o has spent the greater part of his life dealing
h disease in human beings, perhaps some re-
rks may be of interest.

Firstly, we must recognise that leg weakness is
symptom not a disease, and that the pneumonia
ich post-mortem examination reveals—although
may be the immediate cause of death—may be
t a complication of the disease.

believe the disease to be contagious, as prac-
ally every bird in one hover is affected, and it
eads rapidly. It begins during the third week,
d younger chicks in an adjacent hover separated
boarding do not contract the disease till the
me period, so that one might conclude that it is
air borne. Of course the incubation period
y be a lengthy one, and apparently healthy
cks may be already infected through the air, but
; cannot be proved at present.

n from ten to fourteen days death occurs, some
ger for two to three weeks more, a very few
vive. The growth of the survivors is stunted,
y mature late, their eggs are small and few,
they usually die.

eg weakness seems to disappear in March and
il, and its cycle and behaviour appear to re-
ble somewhat that of influenza. Now, sir, this
ease last year was far more prevalent and far
e disastrous than your journal set forth, and I
sure it was because poultry breeders were
htened to report their losses to you for fear of
ng their customers. Around my district the
es were enormous, and in my own small way
st between 200 and 300 chickens.

o try and remedy matters I lined my brooder
se with 3-ply, improved the ventilation, installed
ove, placed the hovers on stands with perforated
bottoms to ensure aeration, and used the best oil in the best lamps that money could procure. The floor is gravel and sand, which had been dug up to the depth of a foot, well soaked with carbolic acid, and covered with six inches of fresh soil. The feeding has been according to your own formula, both dry and wet mash being served, with plenty of milk to drink, and an abundance of green food.

This year out of 48 sturdy chicks hatched on January 15th only five are alive—and they will soon be dead. A hatch of 70 next to them, ten days old, as yet show no signs of illness.

The temperature of the brooder house is between 60 and 70 degrees, only the tiniest flame is allowed in the brooder lamp, and only one curtain is hung in the Golden's hover.

This was tried in the first hatch after leg weakness had developed in the hope of stopping the "rot," it being assumed that foul air might be the cause, but it was of no avail. This treatment is being adopted with the second hatch, but it is too early yet to prognosticate.

I suggest that the following investigation ought to be carried out with the help of an experienced pathologist and bacteriologist:—

(1) Examination of apparently healthy chicks of 14 days or under from a brooder adjacent to an infected one.

(2) Examination of the early stages of leg weakness.

(3) Examination of the final stage.

(4) Examination after death.

Microscopic sections of the spinal cord, of the lungs, and of any other apparently infected organ should be made, and a bacteriological examination of these organs carried out.

If my second hatch develops the trouble I shall then procure the material and have the work done locally. This may be helpful, it may not, but at any rate I am hopeful that it may prove that so-called leg weakness is in fact a disease, and so put a stop to the advice of some self-satisfied breeders who state that they can prevent it, but whose methods carried out by others probably also intelligent have failed.

H. BELL TAWSE, F.R.C.S. (Eng.).

BEES.—Continued.

hybrid stocks even though they may have given the highest yield of honey.

Italians are very prolific, and it is chiefly because their colonies become larger than those of the British Black bee that they are able to produce greater crops of honey. It is this same factor of greater prolificacy that has been the greatest stumbling block in the way of the one time successful keeper of English bees. It has taken him a long time to realise that his hives are too small, and his manipulations unsuitable for the prolific Italian, although they may have been well suited to his former race of bees.

HOUSING.

To the Editor of "Eggs."

Dear Mr. Newman,—The question of housing economically seems to be in many poultry farmers' minds, and as I have to face building accommodation for an extra 1,500 birds this year I should like to hear other peoples' opinion on my ideas. Having worked out cost of material for every conceivable sort of house, I have come to two conclusions :—(1) Asbestos cement is the cheapest covering, combined with durability; (2) of the total cost of material, the floor takes about one-third. As it is essential that my houses should be built on the smallest outlay possible, I have decided to use (1), and to dispense with a floor. I intend removing the turf, putting in concrete footings with wire netting sunk deep to keep out rats, sloping the ground away from the house all round, and putting this earth inside to raise the floor.

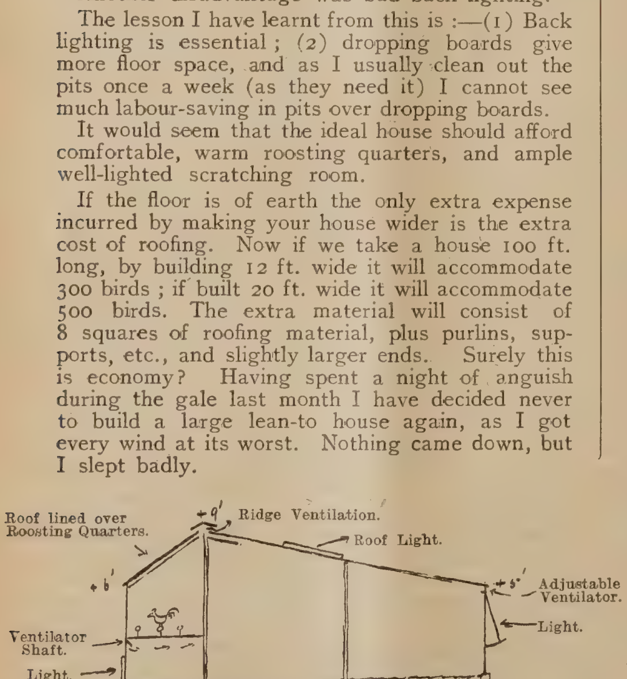
The next point is the size of the house. The last house I built was 20 ft. deep and 80 ft. long, to hold 400 birds. I used concrete dropping pits, but found that it was difficult to arrange perching accommodation for that number of birds as my pit is only 4 ft. broad.

Another disadvantage was bad back lighting.

The lesson I have learnt from this is :—(1) Back lighting is essential; (2) dropping boards give more floor space, and as I usually clean out the pits once a week (as they need it) I cannot see much labour-saving in pits over dropping boards.

It would seem that the ideal house should afford comfortable, warm roosting quarters, and ample well-lighted scratching room.

If the floor is of earth the only extra expense incurred by making your house wider is the extra cost of roofing. Now if we take a house 100 ft. long, by building 12 ft. wide it will accommodate 300 birds; if built 20 ft. wide it will accommodate 500 birds. The extra material will consist of 8 squares of roofing material, plus purlins, supports, etc., and slightly larger ends. Surely this is economy? Having spent a night of anguish during the gale last month I have decided never to build a large lean-to house again, as I got every wind at its worst. Nothing came down, but I slept badly.



Three Perches on Dropping Board, 4ft. 6in. wide.
Supports, etc., left out for clearness.

The rough sketch shows the type of house have planned. If I can make a watertight job shall put in rolled glass roof lights. This is su plus Government material, and can be bough cheap. I should like other opinions on the question of breadth of houses and cost.

Yours faithfully,

L. JUDKINS.

CO-OPERATIVE EGG PRESERVING

To the Editor of "Eggs."

Sir,—I am glad to see that the National Poultr Council have decided to take steps to encourag poultry-keepers to preserve some part of their eg output during the coming spring. I think th advantages of egg preservation are widely recognised by poultrymen, but many of us are prevente by lack of capital from preserving on a large scale It is only the fortunate few who can afford to wai the necessary six or seven months, until the egg are sold, for their money.

To overcome this difficulty arising out of lac of capital a scheme is now on foot to obtain assistance, in the form of loans, from the Ministry o Agriculture. These loans can only be got throug a co-operative society formed in compliance wit the requirements of the Agriculture Credits Act 1923, under which the advances would be obtained

A meeting of poultry farmers interested in co operative egg preservation was held recently, an a committee is now investigating various method of processing eggs, with a view to discovering tha most suitable for adoption by the Preserving Societ which it is hoped will shortly be formed.

The scheme is roughly as follows :—

Members of the society will have to take u share capital of a **nominal** value equivalent to th value of the eggs they wish the society to preserve store and sell for them, each season. Member will pay up only 5s. in the £ on the shares take up by them; the unpaid balance forming the chie security for the Ministry's loan. The society expect to be able to borrow (at 4 per cent. interest a sum equal to the whole of the share capital take up by members, and this borrowed money will b used to pay members for their eggs at the tim they are received into the society's store. I should be possible to pay market price, or ver near it, for the eggs, and the profits from th preservation would be distributed to members a the end of the season, in proportion to the numbe of eggs preserved for them.

On this basis, a member who wished to preserv 1,000 dozen eggs would have to take up shares t the nominal value of £50 (assuming the marke value of the eggs to be 1s. per dozen when the are received for treatment). On these 50 £ shares he would have to pay up £12 10s. I return he will receive payment for his eggs a the time they are sent for preservation, and a end of the season, when the preserved eggs sold, will get his share of the profits from the iety's operations.

t is hoped that the proposed Co-operative Egg serving Society will eventually be able to treat gs for poultry farming members all over the intry, but as time is very short it may not be sible to establish more than one depot this son. This it is planned to do in, or near, idon, and the committee are anxious to hear m poultry farmers who are prepared to join such ociety.

he committee are particularly anxious to form ne idea of the total amount of share capital ly to be taken up by members for this season. h this knowledge the task of putting the scheme working order will be greatly simplified. As , only some 800 shares have been spoken for, the absolute minimum on which a start can be de is 2,000, and this number may well prove ufficient.

ill readers who are interested in the scheme who would like to join the proposed society dly communicate with me, stating roughly the nber of shares they hope to be able to take and the quantity of eggs it is desired to pre- ve. Such letters will in no way bind the writers take up all, or any, of the shares which they mate they will require. The information will of great assistance to the committee, and is ited solely for that purpose. Before sending such estimates readers should refer back to an ier paragraph in this letter, dealing with the re capital which members will have to take up entitle them to have preserved for them a given ntity of eggs.

order to keep down expenses no printed de- s of the scheme have yet been published, but I ll be pleased to reply to readers' questions ough the correspondence columns of this paper, he Editor will kindly allow me to do so. To time, I suggest that communications be ressed direct to me, at Hermitage.

Yours truly, F. C. ATKINS.

ed Comb Egg Farm,
Hermitage, near Newbury, Berkshire.

r correspondent has forwarded very scanty details of the osed scheme. We believe the meeting was recently held in on. Cannot he state definitely what proposals were put e that meeting? Who are the members of the committee of h he writes, and why was not a method of processing eggs ed upon and its cost ascertained and submitted to the meet- which was recently held? How can he see that it would be ble to make a start if only two thousand shares are taken p. We feel that many of our readers would like fuller particu- of the scheme of which we have, at present, only the barest ne.—(Editor.)

REMOVING TREE STUMPS.

To the Editor of "Eggs."

ear Mr. Newman,—Temporary lameness is the se of my re-reading back numbers of "Eggs," I am reminded of "Ardent's" enquiry of 14th uary, as to **removing tree stumps.**

Before the war I removed many small ones, weighing perhaps up to a cwt. or so each, with the help of explosives. After trying many plans I found the quickest way, and cheapest in explosives, was to punch a single small hole about an inch in diameter slantingly into the ground to finish up close under the centre of the thickest part of the stump. Then push into it a cake of explosive with detonator and fuse attached, and tamp the hold solid, leaving the end of the fuse projecting. This was most easily lighted with the old-fashioned pipe smoker's fusee.

If the quantity of explosive were nicely judged, the explosion blew out the soil, without breaking the roots, and the stump was left—like a gigantic spider straddling over the hole in the ground. The roots were then cut through with an axe or mattock as far from the bole as possible. If too much explosive were used, so as to shatter the stump, the roots were much more difficult to cut, being too springy.

For the size of stump and nature of ground with which I had to deal, I found one or two "sausages" of "Tonite" (Curtis and Harvey) quite enough. This, I believe, of the gun-cotton family, a more sedate lot than the flighty glycerine people.

I hope that this belated information may still be of use.

Yours faithfully,
DOUGLAS ALLPORT.

APPLIANCE MAKERS.

To the Editor of "Eggs."

Dear Sir,—In your last issue I noticed a letter from Mr. A. W. Disney-Roebuck, with which I am in entire agreement, having noticed the faults he mentions (and many others) in poultry houses turned out by many leading firms in the poultry appliance business.

I have purchased a good number of houses recently, and with few exceptions all are open to criticism on the following points:—

(1) Adequate provision is not made for securing roof, the purchasers generally having to buy hackets to prevent it blowing off in a strong wind.

(2) Where wire netting is placed over window spaces, the raw edges of the netting, instead of being covered with a 1 in. x ½ in. batten, are left in the rough state so that the attendant can conveniently scratch his hands on the projecting points of wire.

(3) The screws provided for hinges are generally far too small for the strain to be imposed on them, the holes bored to take the screws are in many cases too large, so that the threads of the screw do not grip.

(4) I have not yet seen (fitted by the manufacturer) a poultry house door provided with a hook and eye so that the door can be hooked back

for cleaning or to allow extra sun and air to enter on a bright day.

(5) Roof felt is often poor stuff and badly stretched before it is battened down.

All the above points could be remedied at small cost to the appliance maker, and would be greatly appreciated by purchasers.

Yours faithfully,
HUBERT A. FENTON.

WHITE BRESSE CLUB.

To the Editor of "Eggs."

Dear Mr. Newman,—With reference to Mr. H. F. Hawke's letter on above, published in last week's issue of "Eggs," will you kindly grant me a little of your valuable space to express my view?

I look upon the White Bresse Club, not so much as a break away from the British Bresse Club, but more in the nature of a very healthy offspring from the parent. As this grand breed gains more and more every year in public favour on its commercial qualities, why shouldn't it flap its wings on its own? What possible harm can it do to the Black Bresse?

As a breeder of White Bresse, I do not pretend to know much about the Black variety, and no doubt there are many breeders of Black Bresse who would be equally diffident to claim an expert knowledge of White Bresse.

Personally, I think there is plenty of room for both a Black and a White Club, and I see no reason why they should not work in perfect harmony together.

Yours very truly,
H. R. HUNTER.

THE MIDLAND FEDERATION OF FEATHER AND FUR SOCIETIES.

We are asked to state that all prize money in connection with the recent Midland Poultry Festival has been paid out, and if any winner finds himself omitted will he communicate with the Hon. Organiser, at 63, Old Meeting Street, West Bromwich.

It is regretable to note that the Festival has resulted in a heavy deficit of between £150 and £200, this in spite of the careful management and economy practised. Therefore, an appeal is made to ticket holders, by the committee, for their Prize Fund Scheme.

The greater part of the loss on this year's Festival is attributed to its being held too near the Birmingham Poultry Show. This resulted in a great decrease in the attendance, and the receipts from stand-holders were very low as compared with last year.

The awards will be announced by the President of the National Poultry Council, Mr. Tom Newman, at the Birmingham Chamber of Agriculture Rooms, New Street, Birmingham, on March 18th, on the occasion of the prize distribution to successful competitors in the 5th Midland Laying Test.

Some Fruit-Growing Notes

to help Poultry-Keepers.

By F. W. WHEELER, F.R.H.S.

TIMELY OBSERVATIONS.—I was amused other day in turning over the pages of a dictionary see that the definition of "Glad Eye" was incluc in the supplement, and it then occurred to me tha few remarks on "an ogle" or "looking fondly w side glances" at our fruit trees, might be suggest of good.

To have an ever open eye while at work, and to down one's observations to pass on, is useful, a "the habit of seeing and noting" is one worthy cultivation when growing fruit as well as keep poultry.

We can often pick up something when visiting neighbour or looking around while out for a stroll lucky enough to get away from the farm for such change.

One sad thing I have often observed is the neglect condition of newly-planted fruit trees which some not realise require careful attention, while develop to a fruit-bearing stage, and it is thought that becau only "young trees" they will grow on all right un large enough to bear a crop. For instance, stakes not put because considered unnecessary, and th the wind will not hurt a little bush or tree, wher the importance of keeping it steady to allow the fibr roots to get well hold of the ground is of vital impo ance. Sometimes stakes are put and the tie rots breaks, and the defect left, then the last state m be worse than the first, for the wind often rubs tree against it, and badly damages the bark. Aga when carefully tied up the string must be watch or with the swelling of the stem as the tree grows, may become too tight, and will ring the bark, a stop the flow of sap to the growing shoots. I ha seen this throw a young tree into bearing fruit out all proportion to its size and age, and with the resul no new wood growths.

Cast your eye downward as well, and note if chickens have been scratching too closely up to stems, or too deeply, and have thus damaged roots. If so, give the protection of a piece of wire, you will have an abundance of harmful suckers. O may be the reverse; instead of birds just keeping weeds in check by their scratching, the young tr are being clogged with weeds or rank grass which detrimental to development of surface rooting, a keeps away the good influence of the sun.

Another thing I have observed is that a tree get a too open head, because if you start the h with six or eight main "leaders" these, as th extend will want pruning to two side eyes to make fork, like the letter Y.: otherwise, if always prun to the single or outside eye for extension, the spa apart at the ends of these leaders will natura become unnecessarily wide.

While on pruning I should like to mention a po

specting the treatment of some "laterals," for what
observed myself as the best treatment for certain
ours I recently saw confirmed in an article I was
ading.

Figure in your mind a lateral long-spurred last
inter, to say, three or four eyes, and this winter you
serve that it has developed a genuine fruit bud.
ou will then cut back any new growths to that bud.
n the other hand, the pruned lateral may have grown
e or more laterals, and below them is a very doubt-
l fruit bud, then the best thing to do is to cut back
ese laterals to one inch of their base, instead of
tting right back to the potential fruit bud.

The pruning of laterals is often puzzling to be-
nners, so I mention this, and might also add that in
e treatment of very strong ones it is often useless to
ur back these, as they generally fail to break fruit
ds, and it is then best to cut clean back to the
em. I have been experimenting with these strong
owing laterals by giving a long sloping cut, starting
ell below the eye, instead of the usual slightly
pping cut made close above it. Time will tell me
ore, but in many cases the eye thus left on the spur
so weakened, by the long cut, that it has developed
fruit bud instead of breaking into another wood
oot.

One other observation before concluding. Keep
ur eyes open for signs of canker, for this (and
her troubles) is easily wind-borne to adjoining trees.
saw a marked instance of this lately where a line
trees were badly affected, and as they were in the
e of the prevailing S.W. wind, it clearly pointed to
e spread from infected tree, or trees. In my last
icle I spoke about atttacking this trouble (and Woolly
his following in its trail), so need not repeat what
said then, only warn readers to look out for the be-
nning of these troubles, and attack them at once.

I also saw a case of some rather large bush apple
es that had not been pruned for two years or more,
th the result that there were so many long whippy
anches that they rubbed against one another in the
ghtest wind, and almost invariably where the bark
d been damaged by the rubbing, the canker had
acked the wounds. The only thing to do was to
t below the damaged parts, and so remove for
rning infected wood, also to thin out overcrowded
nches to prevent a repetition.

MIRFIELD AND DISTRICT POULTRY-KEEPERS' ASSOCIATION.

LAYING TRIALS—FOURTH MONTHLY REPORT.

The Fourth Monthly Period closed on February 15th. The
alth of the flock is very good. Pullet No. 156 has been in
spital with a slight cold. There are six birds which have not
istered an egg. The following is the position to date:—

White Leghorns (3 birds).—Mr. W. Horsley, 115 pts.; Ledgard
1 Brown, 115 pts.; Miss Mitchell, 97 pts.

Any Other Variety (Light) (2 birds).—Davey and Sons, 71 pts.;
gard and Brown, 31 pts.; Mr. H. Poole, 31 pts.

White Wyandottes (3 birds).—Mr. R. Scott, 107 pts.; Mr. E.
V. Ermen, 101 pts.; Ledgard and Brown, 100 pts.

Any Other Variety (Heavy) (3 birds).—Mr. W. Horsley, 211 pts.;
E. Burnett, 136 pts.; P. Furness, 128 pts.

White Leghorns (Single bird).—A. Blackburn, 54 pts.; W.
rsley, 46 pts.; Ledgard and Brown, 44 pts.

Any Other Variety (Light) (Single bird).—Sykes Bros., 37 pts.;
Elmour, 28 pts.; Ledgard and Brown, 7 pts.

White Wyandotte (Single bird).—H. Crowther, 61 pts.; C.
iteley, 59 pts.; W. Horsley, 58 pts.

Any Other Variety (Heavy) (Single bird).—Mr. W. Saxton,
pts.; Mr. A. Sykes, 41 pts.; Mr. E. Saxton, 35 pts.

Winners of Monthly Ribbon.—Pen B, Mr. H. Firth, W.
horn. Pen 12, Mr. W. Horsley, Buff Rock.

Scientific Poultry Breeders' Association.

DRY CHICK FEEDS.

An investigation is being made into the composition of Commercial Seed Mixtures for Poultry and Chickens, and it is desired to obtain as many samples as possible from different parts of the country. I should be very grateful to any of our members who would send me, as soon as possible, any samples of the Dry Chick Mixtures which they are using, in quantities of about half a pound. It would greatly facilitate an important work if our members would co-operate with us in this matter.

KEIGHLEY AND DISTRICT BRANCH.

EGG SHOW AND LECTURE.

The members of Keighley and District Branch of S.P.B.A. held a very successful Egg Show in the Temperance Hall, Keighley, on Wednesday, 25th February. The eggs were judged by Mr. Bruce Wilcock, Editor of "Poultry News." Mr. Frank Snowden, Cowling, presided over the meeting held after the Show.

Mr. Wilcock was the speaker, and gave a splendid lecture on "The Elusive Winter Egg and How to Obtain It." Several questions relating to Poultry Culture were asked, and Mr. Wilcock, being a practical poultry-keeper himself, was able to explain every detail to the satisfaction of all present.

The prize-winners in Show were :—Class 1, 1st, 2nd, and 3rd, Mr. Alf. Sawyer, Crosshills. Class 2, 1st, Mr. N. Hiley, East Morton; 2nd, Mrs. Wilson, Denholme; and 3rd, Mrs. H. Wilson, Cross Roads, Keighley. Class 3, 1st Mr. Frank Snowden, Cowling ; 2nd, Mr. E. Hodgson, Oakworth ; and 3rd, Mr. S. Hartley, Haworth. Class 4, 1st and 3rd, Mrs. Wilson, Denholme ; 2nd, Mr. Kershaw, Keighley.

The sale of eggs realised £3 15s. 6d., the highest price obtained was 13s. 6d. for six Black Leghorn eggs from Mr. Frank Snowden. Mrs. Wilson, Denholme, was the purchaser.

The next Egg Show and Lecture will be held in the Temperance Hall, Keighley, on Wednesday, March 18th. Mr. A. J. Moore, York, will give a lecture on "Producing and Marketing." Several lantern slides will be shown.

(Mrs.) A. WILSON, Hon. Sec.

APPLICANTS FOR MEMBERSHIP.

Hewitt, Malcolm B., Park Farm, Frittenden, Kent.
Pierce, Miss M., Chesterton Hall, Cambridge.
Brown, A. MacKenzie, Stanehead P. Farm, Biggar, Lanarkshire.
Clayden, Charles, Stubbs Cottage, Cressing Road, Braintree, Essex.
Cross, Miss R., Bailie House, Sturminster-Marshall, Wimborne, Dorset.
Love, Edwin John, "Armour," Ham Farm, Goring-by-Sea, Sussex.
Dixon, C. H. W., Foxgirt, Ashford Hill, Newbury, Berks.
Baker, Humphreys, c.o. L. H. Wace, Kingsland Lodge, Salway Ash, Bridport.

Hicks, R. Barret-, c.o. Mrs. Stone, North Street, Beaminster, Dorset.
Hone, Miss Molly, Colinton, Ross, Herefordshire.
Farley, Miss W., c.o. N. J. Nunnerley, Fern Hill House, Market Drayton, Salop.
Hamilton, Mrs. C., Russell Cotes' Nautical School, Parkstone, Dorset.
Ellis, Mrs. W., South Stocket Farm, King's Gate, Aberdeen.
Payne, W., 7, Mill Road, Mayland, Althorne, Chelmsford.
Sharp, William, Shellands P.F., Airton, Bell Bush, via Leeds.
Tiley, Edwin Dennis, "Rosendene," Latchingdon, Chelmsford, Essex.
Watt, F. W., Malthouse Stores, Billinghurst, Sussex.
Slatter, H. T., Thornville Junction, Natal, S. Africa.
Clarke, H. J., Ashingdon Hall P.F., Rockford, Essex.
Brandis, Mrs. F. E., "Oakover," Grange Road, Great Burstead, Sussex.
Reeve, Philip H., "Dharahna," Brook Road, South Benfleet, Essex.
Smith, Sydney, Dingley Dell, Windlesham Road, Chobham, Surrey
Buckland, T. C., Ovator P. Farm, Torrington, N. Devon.
Merch, Baroness Carl de-, Azzano, Lago di Como, Italy.
Bailey, G. H., Heather View, Carharrach, Scorvier, Scotland.
Barker, Miss, Stickney, Boston, Lincs.
Galbraith, William, "Larriston," Newton Avenue, Elderslie, Renfrewshire.
Bonner, Thos., 32, Cambridge Street, Wavertree, Liverpool.
Crawford, R., 13, Brookbridge Road, Clubmoor, Liverpool.
Brown, W., Springfield Park, Sandiacre, Notts.
Laithwaite, Harry, 22, Hafton Road, Lower Kersal, Manchester.
Preston, Jas. L., "Field Head," Aberford Road, Barwick-in-Elmet, Yorks.
Faulds, Alex. C., "Adanac" P.F., Baldernoch, near Milngavie, Scotland.
Shallcross, E. P., Mareham-le-Fen, Boston, Lincs.
Dunn, Godfrey, Grudds Farm, Much Hadham, Herts
Roper, Miss K., Eype Manor, Bridport, Dorset.
Perfect, Mrs. E., Rathturret, Warrenpoint, Co. Down.
Yewdall, Frank, Whinmoor, Seacroft, near Leeds.
Hawkins, Fred O., 84, Southlands Road, Bromley, Kent.
Grant, Wm. G., Elm Cottage, Fawkham, Kent.
Lee, W. B., Latchmoor, Thorverton, Devon.
Watson, Mrs. S., The Box, Wold Newton, Hunmanby, Yorks.
Ramsden, H., "Oakcliffe" Egg Farm, Sowerby Bridge, Yorks.
Maddock, J. C. Finchett-, Cae Gwyn, Carnarvon, N. Wales

THE WORLD'S THIRD POULTRY CONGRESS.

By the courtesy of the Ministry of Agriculture, a meeting was held at 10, Whitehall Place, on Thursday, 26th February, to take steps for the formation of the committees for the preliminary work in connection with the World's Third Poultry Congress, which is to be held in Ottawa in 1927, the old committee having been dissolved by mutual consent.

Mr. T. R. Robinson paid a tribute to the magnificent work done by Mr. and Mrs. Lewer. Thanks to their efforts that the British Section had been such a great success. He then formally proposed that Mr Edward Brown should take the chair. This was agreed to unanimously.

Mr. Brown said that he had been to Italy, and had had a long interview with Signor Breschi, the Italian Minister of Agriculture, who had said that he absolutely agreed with the decision of the International Association of Poultry Instructors and Investigators at Barcelona that the next Congress should be held at Ottawa, and he promised the support of the Italian Government. A National Committee had been formed in Canada with Mr. Munroe, of the Ministry of Agriculture, as its President.

The International Association had unanimously elected Mr. Brown as sole President of the Congress.

It had been suggested that Professor Willard Thompson should be the Publicity Agent. Negotiations with Shipping Companies and Railroads had already been started, and they would undoubtedly make great concessions, so that it would be possible for a trip to be made to Montreal, from thence to Ottawa, and to the Eastern States, at a very low cost.

The Congress will be held either in the last week of August or first week in September.

The next duty was then to select a Chairman of Committee and the Secretary.

Mr. A P. Grant then proposed that Mr. Lewer should aga be elected as Chairman. His excellent work in the past w the best recommendation. This was seconded by Mr. Goode, a carried unanimously.

Mr. Lewer, in thanking those present, said that he wou endeavour to make Canada an even greater success than Spa He looked upon this election as a compliment to the Press.

Mr. Street-Porter proposed that Mr. T. R. Robinson should again asked to act as Secretary. His work had been m efficient, and he had the experience and knowledge necessary.

Mr. T. Newman seconded this proposal, which was carr unanimously.

The meeting then proceeded to elect the Executive Committ It was agreed that the number should be limited to twelve. T following were elected:—Messrs. P. Hedworth-Foulkes, Stre Porter, T Newman, Leslie Williams, C. A. House, G. N. Goo Clem Watson, M. A. Grant, the Hon. Florence Amherst, M Lowe, Mrs. MacIver, and Miss N. H. Bell.

Two Sub-Committees were then elected, one for Education a Research Work, consisting of Mr. P. Hedworth Foulkes, Mr. Newman, Mr Leslie Williams, Mr. A. McCallum, Rev. T. Mayhall, Hon. Florence Amherst. Exhibition: Messrs. C. House, C. N. Goode, Clem Watson, Street-Porter, M. A. Gra Mrs. Lewer, Miss N. H. Bell.

This closed the business of the meeting.

EGG-LAYING TEST. GLOUCESTERSHIRE REPORT.

The following report on the Gloucester laying test (under t supervision of Mr. L. G. Price, County Instructor in Poultry Ke ing), for the fourth month ended January 30th.

During the month 4,658 eggs have been collected against 4, the previous month, giving a total of 15,121 for the four mont and an average of 47.3 in respect of the 319 pullets entered.

The weather has been abnormally wet. Egg production co pares very favourably with last year, but is much less than t year previous, although the foods being used are identical w those of 1922-23, but differ from those used last year. The sto generally, as far as is possible to judge, is in advance of a previous. It is worthy of notice that in the single pen du section Mrs. H. L. Hanks' K.-C. has now laid a sequence of first-grade eggs, also that Mr. W. R. Partridge's pen of R.I. Re have put up a much better record than any R.I. Reds have do in this test in the same period. In the amateur section t Maisemore School still continues to lead for all breeds. T single pen sections are putting up a very good average. T health of the stock in general is exceptionally good.

Section A. (1). White Wyandotte. Professional (Five bi constitute a pen).—P. M. Hinton, 1,525 pts.; H. Bennett. 1,278; Ludlow Hewitt, 1,254.

Section A. (2). A.O.V. Heavy Breed. (Professional).—W. Partridge (R.I.R.), 1,732; G. H. H. Simmons (L.S.), 1,583; Miss Lawrence (R.I.R.), 1,424.

Section A. (3). A. V. Light Breed (Professional).—F. A. Wel 1,426; Miss H. Baylis, 1,383; Miss N. Townsend, 1,374.

Section B. (1). A.V. Heavy Breed. (Confined to owners of more than 50 laying head).—Maisemore School (W.W.), 1.754; W. Moses (L.S.), 1,609; Miss M. Brown (W.W.), 1,222.

Section B .(2). A.V. Light Breed. (Confined to owners of more than 50 laying head).—C. E. Skirton, 1,354; L. Grist, 9 Miss M. Brown. 919. All White Leghorns.

Pen Duck Section. (Four ducks constitute a pen).—G. H. Simmons (K.-C.), 238; S. J. Phillips (K.-C.), 145; W. R. Partrid (W.R.), 142.

SINGLE PEN SECTION

Section 1. White Leghorns.—L. Grist, 375; Miss K. Feavio 351; Miss N. Townsend (19), 350.

Section 2. White Wyandottes.—Philip Clapham (36), 409; Lo Sherborne (37), 407; G. H. H. Simmons, 404.

Section 3. Rhode Island Red.—G. B. Metcalfe, 386; Miss Lawrence (59), 358; Miss M Lawrence (42), 281.

Section 4. A.O.V. Light Breed.—Churchdown P.F. (Ancon 358; Miss M. Johnson (W.La.B.), 135; H. W. Stephens (B.L.), 124

Section 5. A.O.V. Heavy Breed.—Mrs. E. Weinholt (Aus. Or 392; G. H. H. Simmons (B.Rock), 392; Miss M. Lawrence (B. Roc 379.

Section 6. Ducks.—Mrs. H. L. Hanks (K.-C.), 108; H. W. Fow (K.-C.), 88; F. L. Walters (6), (W.R.). 87.

CORNWALL EGG-LAYING TRIALS.

The following are the leading pens in each section during t fourth month of Cornwall Egg-Laying Trials at Truro, Janua 7th to February 3rd,. Figures are Eggs and Points respectively

Wyandottes.—Mrs. Tickell, 83, 634; Mr. J. Jeffery, jun., 71, 5 Messrs. Ford and Sons, 68, 581.

Light Sussex.—Mr. R. H. Davis, 80, 690; Major G. E. Stock 68, 599; Capt. Creswell-Hobbs, 65, 571.

Rhode Island Reds.—Mr. T. H. Rowe, 57, 498; Mr. E. Trenan 59, 482; Mr. C. R. Norman, 76, 465.

White Leghorns.—Capt. Creswell-Hobbs, 84, 584; Mr. R. Meag 74, 545; Major E. S. Stocker, 65, 530.

Other Breeds.—Mr. H. C. Creber (Ex. L.), 48, 394; Rev. Chil Clarke (Le Bresse), 54, 392; Messrs. Ford and Sons (Ancon 44, 390.

The end of the fourth month still shows an increased outp of eggs, especially so with White Leghorns; also a marked i provement in the size of the eggs. There was an unusual a excessive rainfall, accompanied by terrific gales during the wh period. Despite the most adverse conditions the health of t flock, contines excellent. Few are broody.

Sanitary Science,

As applied to Poultry Farming.

By **A. SAYERS**,

Lecturer in Sanitary Engineering, Heating, and Ventilating, Municipal College of Technology, Belfast.

(Continued.)

It will be no harm at this stage of our acquaintnceship if you and I have a quiet talk over the outine of that nice little 500-bird commercial egg arm of yours.

“Yes, I quite agree with you ; so many things do, you don't know what to do first. Really you ave no time to attend to all the little matters I ave been speaking about. Don't try to do two ings at once ; one at a time will be quite enough.

“You have an alarm clock? Good! Well, let buzz off at six a.m. You will probably be up efore that, but the alarm in case of accident.

“I think you told me you are an amateur quickange artist—that will stand to you now. You ill be able to hop into your clothes while the ock would be crowing, and be down the stairs iving a peep at the incubator thermometer, just the clock on the tower strikes six. 104 degrees d all's well! You are very successful with incutors—that's encouraging. You really had an ghty per cent. hatch. Only four weaklings ; emated of course, cruel! Ah, well there is no ne for that sort of thing.

“Let's look at the brooder house. Yes, nice mperature ; no fumes—evidently you have got e knack of adjusting the stove.

“What about the litter below the hover? you dn't change it yesterday ; well, do it now. No, u won't disturb the chicks. They are eight days d, and had better be running about than clusterg on soiled litter in an unbreathable atmosphere. at must not occur again ; not much harm in glecting it once, but ‘don't make a habit of it.’ s, change it every morning of course, a few nutes will do it. You are lucky in having such sandy soil, see the youngsters scratching in clean litter. How they enjoy it!

‘Do please do away with those wee futtery toy ngs of drinkers and feeders, and adopt simple pliances. Certainly! You must wash the nkers and give fresh water now ; the milk will after breakfast.

‘What's that? Half-six striking, how the time s! We must hurry on to the laying shed. 't find the bucket to grain the birds. Proing, rather; but you should have left it last ht where you would have found it.

‘I like your laying shed, nicely fitted, glad you e adopted the two-perch get-roundable arrangent; it makes cleaning much easier when you go around both sides. You use a plasterer's wel, handy tool, will scrape or dig.

Won't you clean the droppings boards now? y wait till after breakfast? By that time the ls will have soiled their feet by paddling through the droppings, the perches will then be soiled, the eggs will be dirty, and then you will have to clean the perches and eggs as well. No, an egg never looks so fresh when the bloom is off it.

“Let's see how long it takes to clean the dropping boards. The boards have been sprinkled with sand. I like to see the droppings being whisked off like that. Fifteen minutes to clean up after five hundred birds and sand the boards. Those few loads of soil you dumped last autumn in what used to be the lumber shed you find very useful now.

“I see you have mixed some fresh slaked lime with the mould. Our friend the horticulturist will grumble about destroying the manurial value of the droppings ; that's his affairs, but it will also destroy the insects on your birds, which is equally important, and that's your business.

“Your system of sanding the droppings boards from the dust bath and refilling the dust baths each morning with fresh soil is thoroughly hygenic, and should be adopted by all poultry-keepers. See the birds are dusting themselves with fresh mould already and by lamp light, too. How happy they are! but, when did you fork over the litter? No! don't tell me that, you should do it daily. Ten minutes will do the job, and the time is well spent. Now see the change ; the litter is much more scratchable. How often should you change it? Well, that depends. Test it occasionally by turning it over with your hands ; if you could then eat bread and butter before washing your hands without giving offence to the goddess Hygenia then the litter will do ; but, if not, you are not the sort of chap who would ask your hens to pick the grain out of litter you would not care to scratch amongst yourself.

“Breakfast time! Well it's nice to get up in the morning and hear the song of the layer. Your shed looks so clean and fresh, you would not think fowl were housed in it at all, and the hens are so laying like, I do believe they have voted your egg to be fried with another for breakfast. Indeed, I think myself you deserve it.

“You have only taken half your breakfast, and spent the other half reading ‘Eggs.’ You never could have run the farm without it. I have heard lots of people say the same. But, look here, reading ‘Eggs’ won't turn the incubator or get the brooder ready for that 360 hatch which is just chipped.

“This is where you are going to put the downeys ; you always scrub and whitewash between each batch? Yes, the light is good, and the blue on the windows tone it down a bit and gives the room a restful appearance.

“You are using a mixture for litter, moist mould, peat and chaff. Compo, did you call it? It looks so good, it should be expressed in formula. I like that little patch of fresh cut green sods in each chicken pen. If the mountain cannot come to Mohammed, then you have brought Mohammed to the mountain. Renew them every week. Splendid! no extra labour you say. Sods have to be cut, to rot and make potting fibre for the gardener; you use them in the brooder house first. That's what my friend across the duck-pond would call 'real cute.' You can't let your babies out; the weather's so cold, ground soft and grass wet. You know the chap who runs Muddleton Farm. He let his out last week and lost the lot. Yes, of course we would all like them out as early as possible, but our weather . . . ? Your grass runs inside are a good substitute.

"Don't you think it rather a dry heat below that third brooder—I don't like the 'Sandy Desert' feeling below the hover: don't believe it is good for the chickens.

"That's better, nothing like nice mould; now the slotted platform on top. A piece of coarse sacking over the slots prevents the litter for the little ones falling through. No, when they get bigger there will be no need for the sacking.

"Why ever do you let the chicks scratch the litter into the milk and puddle through it with their feet and stand on the drinking vessels tail inwards; it's such a waste. Here's the very thing—a nice broad piece of clean board. Put the drinkers on that. Don't let your chickens drink that stuff. You may throw it out; or, better still, give it to the neighbour's cat, it will put him from killing chickens.

"I think your brooder house is just lovely. It is like a place where afternoon tea could be served. What an idea! 'Chicken' Tea could go on the invitation card. If you got the missus interested, the brooder house would then be kept as clean as a drawing room, and between you and me that's the sort of place for chickens to live in.

"That's a basket of nice clean eggs; not sorry now you cleaned the dropping boards before the layers soiled their feet. By the way, when you have finished whitewashing the perches and the other furniture I suppose you will have the afternoon free? You'll not! Feeding, Records, Accounts, Income Tax Returns—Oh! bother! Such things are no business of mine. To change the subject, when do you wash and scald the drinking troughs? Every day, that's often enough.

"You are giving the evening feed of wet mash. No, don't serve the meal that way. Always have a little dry mash in the troughs, and put that nice crumbly feed you have prepared on the top; the dry mash will keep the wet from sticking to the troughs. Yes, that is the solution of the wet mash trouble.

"You are going to be real lazy this evening and listen in. Well, if you can afford the time alright; but, after you have heard London calling the British Isles and you have shared with every other Britisher London's good-night, 'Good-night everybody,' and Big Ben has struck midnight, don't forget to go round and have a final look and see everything is right for the night. See that the chickens in the brooder house are abed. If they are stretched, spreadeagle fashion with their beaks in the litter, they are in the way of thriving, you can go to bed and enjoy a well-earned rest.

"No, I have not been preaching the doctri of ca' canny. Indeed, I am sorry I am not a f lower of that creed; there's not room for ever body on such a platform. If you and I belong that sect, who would pay the Income Tax and ke the other fellow living a life of leisure, if n luxury?

"I had almost forgot to tell you that Sanita Science as applied to Poultry-keeping is t Science of the Three Brushes—the Sweeping, t Scrubbing, and the Whitewash Brush, frequent and persistently used."

London Market Advice Table,

MARCH, 1925. By A. V. CLARKSON.

It really seems that the calendar is going on wheels this ye I suppose the reason that March seems to have arrived too s is that the demand for Poultry has been so atrocious si Christmas, and the reason for the demand being so atroci must be attributed to the weather. This fact seems to proved by the further fact that Exporters of Poultry fr France have been experiencing a very big demand from South of France, and have been unable to send to London cause of the poor demand and prices, so from this we m assume that the hotels in the South of France are full those in London otherwise.

However, assuming that the weather will take a turn for better (and it cannot go worse), March is the month whe should like to know that members of the S.P.B.A. are start to take advantage of the high prices which should rule their produce, bearing in mind that between now and June t should get the bulk of their profit which is to be derived fr table poultry. Seeing that the S.P.B.A. makes so many members every week, I have made a few extra remarks regard the various classes of poultry in order to prevent them mak unnecessary mistakes. I would also repeat my parrot cry, t "To reap the full benefits from any market it is essential t a producer complies with the requirements of that partic market."

A fact which does not yet seem to have been thoroug realised is that we all live within postal distance of one anot and in cases of emergency we have the telegraph. I want to vent members from "Chancing it." There is absolutely no ne sity to "Chance it." Just drop a line to your salesman and him what you have got, and ask for his opinion regarding marketing of it. It would be commercial suicide for a sales to tell you wrong, so therefore there is no excuse or hope fo man who will send first and ask afterwards. It is this la class of person who has made it so profitable for an unscrupu foreigner to open as the Something Something Poultry Soc and get their produce for nothing. Having issued enough w ings to the unwary, I will now give details for marketin your produce for March.

PETITS POUSSIN.—Petit Poussin are surely and slowly creasing in demand, but so far it has been difficult to sell b which do not scale 12 ounces when Killed and CLEAN pluc

The birds must be of good quality, and should be packe boxes or trays of one dozen, making the consignment as attra as possible with green reeds or green leaves or White Pa but no amount of adornment will make a bad quality realise a good price.

SPRING CHICKEN.—These are birds which weigh 1½ lbs over when Killed and Clean plucked. If you have neither convenience nor the skilled labour available for killing plucking, ask your salesman to do it for you. He should su you with the necessary live crates carriage paid and charge 3d. per bird for killing.

It is absolutely useless to send those birds which have "(Light." A sender should handle every bird before he send because a bird which has so wasted will only be condemne its arrival at the market.

HENS.—There is and will be a good demand for old providing they are fat, and unless they are of excepti quality it is better to sell them alive.

A hen with such faults as crooked breast or bruised etc., will naturally realise a poor price if it is killed and plucked, whereas if sold alive to the Jews they are sold wit these faults in appearance being so obvious to the buyer, in the latter case is much more concerned with the fact of fatness of the bird and not its physical defects.

To realise the top price a hen must be REALLY FAT u the vent and scale 4½ lbs. or more.

From these facts it will be obvious that the light breed will not do so well as the heavies, but in proportion they well alive, but not so well dead because of their size.

With regard to the impression which exists about ho hens back for the Jewish Festivals, this is a matter for discretion of the sender, but if a hen is ready for mark for the reason that it does not pay for itself by egg produc

(Continued at Foot of Column on Next Page).

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING FRIDAY, FEBRUARY 27th, 1925.

GRAIN AND FEEDING STUFFS.—Fair supplies of English eat are offered, but trade remains slow at slightly reduced otations generally. A somewhat irregular demand has been perienced for imported wheats, but average prices show little ange on the week, although tending to advance. There is tle inquiry for either malting or grinding barleys, and practally all descriptions are again quoted at lower rates. Oats so experience a very dull trade, and most prices are the turn sier. Good arrivals of maize are available. and a further ght decline is reported.

English middlings are cheaper on the week, although rather ore demand is now reported. Imported pollards meet a dull ade, and are further reduced in price. Trade for meals is ow. Oil cakes generally are an inactive trade.

MILLERS' OFFALS.—Bran (British): Bristol, £9 7s; Hull, 2s; Liverpool, £8 10s; London, £8 12s. Broad Bran: Hull, 12s; London, £9 15s. Middlings—Fine (Imported): London, 0 10s; Coarse (British): Bristol,, £10 5s; Hull, £8 15s; Liverpool, 10s; London, £8 7s. Pollards (Imported): Bristol, £8 7s; ull, £8; Liverpool, £7 12s; London, £8 7s. Rice Bran: Bristol, 0; Liverpool, £9 2s. MEAL.—Barley Meal: Bristol, £13; Hull, 2 13s; London. £13 10s. Maize Meal: Bristol, £12 15s; Hull, 1 18s; Liverpool, £11 12s: London, £11 12s. Maize Meal (S. rican): Hull, £11; Liverpool, £11 2s. Maize Germ Meal: istol, £12; Hull, £10 15s; London, £10 5s. Maize Gluten Feed: istol, £12 5s; London, £11. Locust Bean Meal: Bristol, £9 15s; ull, £9 10s; Liverpool, £10; London, £9 15s. Bean Meal: Bristol, 4; Hull, £13 3s; London, £13 10s. Fish Meal: Bristol, £21; ull, £20; Liverpool, £19 10s; London, £21.

EGGS AND DEAD POULTRY.

Demand for eggs is not very brisk, and most descriptions e still further reduced in price. Dead poultry meets a oderate demand, but, generally, last week's rates are steadily ld.

Week-end Prices—Eggs (per 120): British, 18s 6d, 17s 6d; Irish, 6d, 16s 9d; Danish, 19s 1d, 18s 4d; Dutch, 18s 6d, 17s 0d; yrian, 14s 0d, 13s 0d; Belgian, 16s 3d, 15s 9d; Italian, 15s 6d, 0d; Egyptian, 9s 6d, 9s 3d; Moroccan, 10s 3d, 9s 6d.

Dead Poultry (per lb.): Fowls—Surrey, 1s 11d, 1s 8d; Irish, 6d, 1s 2d; Others, 1s 8d, 1s 5d. Ducks, 1s 9d, 1s 3d. Geese, 3d, 1s 0d.

EGGS.

Per Doz.—Ashford: First, 1s 8½d; Second, 1s 5d. Birmingham: rst, 1s 9½d; Second, 1s 7¾d. Bridgwater: First, 1s 9½d; Second, 7½d. Carlisle: First, 2s 2d; Second, 1s 11d. Chelmsford: First, 8½d; Second, 1s 6½d. Derby: First, 2s 0d. Dorchester: First, 6½d. Exeter: First, 1s 10d. Hereford: First, 1s 6d. Ipswich: rst, 2s 0d; Second, 1s 6d. King's Lynn: First, 1s 9d; Second, 6d. Lincoln: First, 2s 0d. Llandilo: First, 1s 6d. Mold: First, 6d; Second, 1s 4d. Montgomery: First, 2s 0d. Newport (Mon.): rst, 1s 10d; Second, 1s 9d. Norwich: First, 2s 0d. Oswestry: rst, 1s 5d. Penzance: First, 1s 6d; Second, 1s 5d. St. Ives unts): First, 1s 7½d; Second, 1s 6d. Salisbury: First, 1s 6½d; cond, 1s 5d. Shrewsbury: First, 1s 9d; Second, 1s 6d. Skipton: rst, 2s 5d. Truro: First, 1s 7d. York: First, 2s 0d; Second, 11d.

FOWLS.

Per lb.—Birmingham: First, 1s 6d; Second, 10d. Derby: First, 6d; Second, *3s 0d. Exeter: First, 1s 6d. Hereford: First, 6d. Ipswich: First, 1s 7d. Lincoln: First, *5s 6d; Second, 0d. Llandilo: First, 1s 9d; Second, 1s 5d. Newport (Mon.): rst, 1s 8d; Second, 1s 4d. Shrewsbury: First, 1s 5d; Second, 3d. Truro: First, 1s 5d. York: First, *6s 0d; Second, *4s 6d.

DUCKS.

Per lb.—Birmingham: First, 9d; Second, 8d. Exeter: First, 6d. Hereford: First, 1s 4d. Ipswich: First, 1s 6d. Llandilo: rst, 1s 8d; Second, 1s 5d.

*Per Head.

NOTICE TO ADVERTISERS.

wing to the ever-increasing circulation of "Eggs," it is perative that new advertisements and alterations are received FIRST POST ON FRIDAY MORNING to ensure insertion in the lowing Wednesday's issue. It is hardly necessary to add that earlier in the week we receive copy the better it is for every- concerned.

PROOFS.

We cannot guarantee to submit proofs unless comte copy is to hand by FIRST POST ON THE ONDAY PREVIOUS TO THE FOLLOWING EDNESDAY WEEK'S ISSUE.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, March 4th, 1925.

CONTENTS.

EDITORIAL 141
NATIONAL U.P.S. TEST 142
THE INTERNAL MECHANISM OF THE EGG-LAYING MACHINE 142
E. ANGLIAN TEST 143
ANSWERS TO QUERIES 144
POST-MORTEMS 146
BOARD OF AGRICULTURE FOR SCOTLAND TEST 146
LANCS. FEDERATION OF U.P.S. TEST 146
S.P.B.A. 147-153
BEES 148
CORRESPONDENCE 149
MIDLAND FEDERATION OF FUR AND FEATHER SOCIETIES 152
SOME FRUIT GROWING NOTES 152
MIRFIELD AND DISTRICT TEST 153
THE WORLD'S THIRD POULTRY CONGRESS 154
GLOUCESTER EGG-LAYING TEST 154
CORNWALL EGG-LAYING TRIALS 154
SANITARY SCIENCE AS APPLIED TO POULTRY FARMING 155
LONDON MARKET ADVICE TABLE 156
MARKET REPORT 157

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscriptions to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles. "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers. we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

LONDON MARKET ADVICE TABLE—Continued.

I cannot see how it is going to pay the producer to keep and feed it with the prospective rise in price due to a Jewish Festival, because this rise is seldom more than 2d. per lb.

DUCKLING.—The demand on the London Market is for a white Aylesbury Duckling scaling at least 4 lbs. when killed and clean plucked. For some unknown reason there exists a very strong prejudice against the coloured and runner ducks.

Old ducks and drakes can be sent alive, as practically the only buyers are the Jews, who do not pay a very high price for them, and because of their religion must have them alive.

GUINEA FOWLS.—Guinea Fowls will continue in fair demand, but the realisation price has suffered a bit of a set-back owing to the fact that a large firm from Italy has taken to serving the hotels and restaurants direct.

EGGS.—Genuine New-Laid Eggs continue in fair demand, but the price has steadily declined for the last week or two. This drop is more or less usual at this time of the year.

For New-Laid Eggs to realise the top market price it is essential that the small and large eggs be packed separately, and the hen and duck eggs packed separately.

Pack them in proper boxes, and do not use hay straw or chaff for packing material, because a slight dampness will cause the eggs to get stained. Never send a consignment of dirty eggs to the London Market as they will not sell to advantage.

Always be sure your name and address is written inside the lid of the box, because this will prevent delay and confusion at the salesman's end, where he has many boxes of a similar description

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS, per line, extra 9d.
DAY-OLD CHICKS, ,, ,, 1s.
DAY-OLD CHICKS ,, ,, 1/6

The number of letters, punctuations and spaces between words should be totalled, when the folowing table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount. will not be inserted.

Advertisement must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office

FIRST POST FRIDAYS

for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY. AND TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. **BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS,** for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent. and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

EGGS.

FOR SALE.

Eggs for Sitting. R.I.R., Light Sussex, and W. Wyandottes. Best strains. Numerous awards; 7s. 6d. for 15, carriage paid; unfertiles not replaced. Mammoth Bronze and Austrian White Turkey Eggs; 30s. doz.. carriage paid; March and April.—E Upson, M.S.P.B.A., Riddens Farm, Five Oaks, Billingshurst. Tel.: 13 Slinfold.

Not what you hatch but what you rear

It's not the number of chicks you *hatch* that counts, it's the number you actually raise to profitable maturity.

If the chicks you hatch do not make proper progress or die from chills or disease, away goes your profits.

The pullets too that come from such hatches never make prolific egg producers because of their weakened constitutions.

Feed your chicks then on FUL-O-PEP Growing Mash and save their lives and your profits.

Let your chicks store up a reserve of strength by feeding FUL-O-PEP Growing Mash. Make them immune from disease.

They will grow twice as fast as when fed on any other feeding plan and feeding errors are impossible.

FUL-O-PEP Growing Mash is given dry and straight from the bag—several days' supply at a time. Chicks are visited once a day only the FUL-O-PEP way.

FUL-O-PEP

TRADE MARK

GROWING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE

For complete information on this vital subject, write for the revised edition of the FUL-O-PEP Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

This book has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Made and guaranteed by Quaker Oats Ltd., 11, Finsbury Sq., E.C

EGGS.

FOR SALE.

Prize Pen Barnevelders, White Wya dottes, White Leghorns; Fawn and Wh Runner Ducks, Black Runner Ducks. the best laying strains procurable. A f sittings can now be booked. Correspo dence invited. — A. Hudson, The Fla Kirkby-Thore-by-Penrith, Cumberland.

Prolific Large Strain of Light Suss White Wyandotte and White Leghor reared at high elevation; 8s. for 15, fertiles not replaced.—S. Hartley, Watk son Hall Farm, Illingworth, Halifax, Yor

White Wyandotte Eggs, 2¼ozs., 6s. doz.; 45s., 100. Cam's Extra Special Pens and II. Mating. Particulars on appli tion.—Miss F. Tinkler, late Caunton Vic age, Newark.

Free Range Eggs for Sitting. White L horns, Houdans, Silver Campine. Gold Buttercups. Mating List free.—C. Wo M.S.P.B.A., The Limes, North Luffenha Stamford. Lincolnshire.

White Leghorns. Sittings of Eggs, dozen, delivered; 5s. locally; no repla ments. From hens selected from flock 1.000; mated to Baldwin's cockerels fr 200-egg dams.—Apply, Manager, New S perton Poultry Farm, Heathfield, Sussex

Eggs for Incubating from fine flock Goldens' and Measures' R.I.R.'s; pr £2 10s. a 100. Other breeds kept: W.W L.S., Anconas, and Houdans. Send catalogue.—Gardner, Aldington, Kent.

White Leghorn Eggs; 7s. 6d. per 15. N Every bird trap-nested. Also White Wy dottes and Rhode Island Reds—G. Tootall, M.S.P.B.A., Thorncliffe Poult Farm. Barrow-in-Furness.

Eggs from splendid laying strains. Wh Leghorns, White Wyandottes, and R.I. 6s. dozen; £2, 100.—Mrs. Higginson, St wardine, Cockshutt, Ellesmere.

Large Brown Eggs for hatching, exhi tion and Utility Barnevelders: 6s. 6d., 6d., 20s. dozen; u.r.—Sydney Hiller. Stand Herts.

H. Denness, Oak Tree Farm, Holme, Yo offers Sittings from guaranteed true-type Buff Rocks (Drew's), Rhode Isla Reds (Abbey's), White Wyandotte (Cam Light Sussex (Rothschild's), Buff Orpi tons (Cook's); 7s. 6d. dozen; carriage pa unfertiles replaced.

Blue Andalusian Eggs, 7s. 6d. per doz —Shepheard, Ashburton, Devon.

Barnevelder, Middleman-Brienen stami prize-winning; big brown 250-egg stra 10s. 6d., replacements.—Lonnen, St. Gil Dorset.

HATCHING EGGS.

From reliable High-Class Utility Sto Buff Rocks, Bilsborough, Bland-Harris Bell; W. Wyandottes, Cam's. Snowden; 6d. dozen; satisfaction assured. — Ch Cadman, M.S.P.B.A., Sidbury, Bridgnor

8s. BOUCHER'S. 8s.

R.I.R. Sittings from L2 hens, mated co erel, from Boucher's Pen 1. W. Legh Sittings .Cook's; 6s. — Grey, Clephant Anstruther, Scotland.

WHITE WYANDOTTES.

Trap-nested Large eggs.
7s. 6d. DOZEN, 55s., 100.
—Brett, Hangerlea, Bishop's Stortford.

BUFF LA BRESSE.

Eggs, 10s. doz.; splendid new varie good layers and excellent table birds; v hardy and easy to rear. Satisfact guaranteed.—H. Craven, Elstree. Herts.

READY MARCH 6th.

R.I. Red Chicks, Golden strain; from pe gree trap-nested layers; from 12s. 6d. d £5 per 100. Eggs from 7s. 6d. dozen, 100.—Mrs. Russell, Donyatt, Horsham.

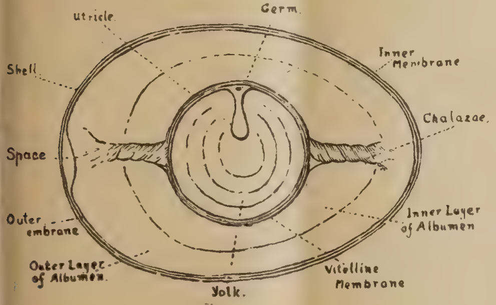
EGGS
THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association
WEDNESDAY, MARCH 11th, 1925.

Editorial.

SOME EVERYDAY QUESTIONS.

n the Dairy Show issue of "Eggs" we pub-
ied a supplement under the above title, which
ntained the answers to fifty questions devoted
Breeding, Eggs, Vices, Incubation, and Feed-
. A very large number of our readers have
ed for more, and it has been suggested that
shall endeavour to treat the whole subject of
ltry-keeping on these lines. While we cannot
mise anything of the kind, we will do our best
start the series this week with the egg.

THE EGG.



FORMATION OF THE EGG.

What is the analysis of the Egg?

	Protein.	Fats.	Mineral Salts.	Water.
Fresh Egg	13.1	9.3	0.9	66.1
Egg yolk	15.0	30.0	3.0	52.0
Egg white	12.0	—	3.0	85.0

THE MINERAL CONTENT.

	Yolk.	White.
Calcium	.137	.015
Magnesium	.016	.010
Potassium	.115	.160
Sodium	.075	.156
Phosphorous	.524	.014
Chloride	.094	.155
Sulphur	.166	.216
Iron	0.086	.001

It should be remembered that these quantities are variable, and also that the constituents are derived from the foodstuffs. If these constituents are inadequate in quantity, or deficient in quality, it necessarily follows that the embryo must suffer, its healthy development is impossible, consequently we hatch a chick lacking vitality, and susceptible to disease.

Q. Of what is the shell of the egg composed?
A. The shell of the egg is composed principally of carbonate of lime. It is porous, and this permits the escape of the carbon-dioxide exhaled by the developing embryo, and the intake of oxygen.

Q. What are the membranes?
A. There are two membranes. The outer and thicker lining the shell, and an inner, thinner one. These membranes, when dry, are impermeable to gases, but in a moistened state permit them to pass freely. At the broad end of the egg these membranes tend to separate, and thus develop between them a space into which air finds its way. This space increases in size as the white of the egg shrinks from evaporation.

Q. What are the Chalazae?
A. The Chalazae are composed of coiled membraneous layers of dense albumen, run from the two extremities of the egg to opposite portions of the yolk. They keep the yolk in position, acting as elastic pads. It is a mistake to suppose they suspend it.

Q. Of what is the white of the egg composed?
A. The white or albuminous matter is composed of almost a pure solution of protein. Its average composition being : Protein 12 per cent., fat and extractives, saline matter 5 per cent., and water 86 per cent.

Q. Of what is the yolk composed?
A. The yolk alone consists of the true ovum. The white and shell are accessory structures formed during the passage of the yolk down the oviduct. Sixty-four per cent. of the dry matter of the egg yolk consists of fat. It is rich in the Vitamin Fat Soluble A, in the calcium salts, in iron and phosphorous.

Q. How are the accessory structures formed during the passage of the egg down the oviduct?
A. The layer of albumen which immediately surrounds the yolk is first deposited; next the chalazae are formed. Their spiral character is brought about by the motion of the egg

along the spiral ridges into which the second tubular portion of the oviduct is thrown. During their formation the rest of the albumen is deposited, and the shell membrane is formed in the narrow neck of the second portion. The egg passes through the second portion in a little less than three hours.

Q. How is the shell formed?

A. This is formed in the third portion of the oviduct. The mucous membrane of this portion is raised in numerous flattened folds containing follicular (follicle, a little bag or bellows) glands. From these a thick white fluid is poured out, which soon forms a kind of covering to the egg, in which the inorganic particles are deposited. In this portion of the oviduct the eggs remains 12 or 18 hours, during which time the shell acquires its normal consistency.

Q. Is the white disc found on the surface an indication that the egg is fertilised?

A. No, this is the blastoderm or germinal skin, and is the contribution of the female.

Q. Why is it always uppermost? Is it due to the Chalazae?

A. No, it has nothing to do with the chalazae. It is because that portion of the yolk in which it is enclosed has a lighter specific gravity.

Q. What is the cause of blood spots in eggs?

A. When a hen is laying heavily the ovary is plentifully supplied with blood to promote the rapid formation of yolks. When a yolk sac ruptures to release a yolk, some blood may escape from a congested blood vessel in the sac. The blood passes into the oviduct with the yolk, where it becomes surrounded by albumen and incorporated in the egg. Sometimes the blood spot is in the white or albumen. In that case it is due to a ruptured blood-vessel in the oviduct.

Q. How can blood spots be prevented?

A. There is no practical means of preventing blood spots. If you can discover the offending hen, remove her from the flock, feed sparingly, and give a mild dose of Epsom salts. As a rule these eggs come from one or two individuals in the flock which are laying heavily at the time, and you cannot treat the whole flock for the sake of these two.

Q. What causes a hen to lay shell-less and thin-shelled eggs?

A. Lack of shell-forming material, such as oyster shell and limestone grit. If the management is bad and the birds become highly nervous this will cause it, but generally it is due to a diet which is too stimulating for a heavy producer, or is too stimulating when pullets are producing heavily, as in March, April or May.

Q. What causes double-yolked eggs?

A. The feeding being of too stimulating a nature, two yolks released very quickly after each other reach the egg membrane, secreting p of the oviduct at the same time, and are corporated in one membrane.

Q. My hens lay eggs with very pale yolks. W can I do?

A. Very often this is constitutional, and you do nothing which will help much; sometin it is due to the feeding. Too much wheat cabbage will cause it. Maize, clover, fr green food and mangolds will all help to g a good coloured yolk.

(Copyright.)

THE LANCASHIRE UTILITY POULTRY SOCIETY.

INTERNATIONAL EGG-LAYING TEST, 1924-25.

FOURTH MONTH REPORT.

During the fourth period of four weeks (Jan. 10th—Feb. there has been no increase in the number of eggs laid, average being about the same as in the preceding month.

The early moulters have come on to lay, but are only fil the gaps made by birds resting and later moulters, which been very prevalent this test.

The health of the flock is good, the birds having got ri the colds which have been rather troublesome during preceding months.

There has been some good pen and individual records m Figures are eggs and points to date:—

Large Breeders.—Section 1.—Crabtree, W., Twiston, 705, Snowden, F., Cowling, 626, 657; Marshall, R., Forton, 655, 62

Large Breeders.—Section 2.—Hull, J. R., Thornton-le-F 592, 651; Harvey, F., Bretherton, 655, 645; Molloy, Mrs. M., Cru 568, 579.

Large Breeders.—Section 3.—Welch, F. R., Bewdley, 567, Hamnett, W., Blackpool, 571, 566; Bell, Miss H., Welwyn, 439,

Large Breeders.—Section 4.—Snowden, F., Cowling, 596, Rodwell, R., Nelson, 597, 607; Thompson, J., Shrewsbury, 614,

Large Breeders.—Section 5.—Street, Porter S., Ely, 616, Rodwell, R., Nelson, 638, 607; Metcalfe, G. B., Lechlade, 544,

Small Breeders.—Section 6.—Lodge, J. W., Holmfirth, 373, Helm, J. E., Dr., Newchurch-in-R., 341, 355; Sephton, P. Rufford, 338, 344.

Small Breeders.—Section 7.—Humber, C. C., Hoole, 359, Lumb, T., Hebden Bridge, 319, 322; Barker, Miss G. M., Sco 329, 301.

Small Breeders.—Section 8.—Rossall-Sandford, T., Shrews 364, 377; Sandbach, Col. S., Abergele, 192, 189; King, W. J., L ington Spa, 157, 150.

Small Breeders.—Section 9.—Fisher, F. F., Tarleton, 381, Sutcliffe, G .W., Hebden Bridge, 354, 334; Machin, W., Huntin 332, 333.

Small Breeders.—Section 10.—Lansley, W. A., Whitchu 334, 366; Rawlinson, O., Waverton, 277, 271; Stuart, J., Garst 274, 273.

Small Breeders.—Section 11.—Mart, Guy, New Longton, 295; Priestley, Eliz., Oxford, 273, 266; Mee, Capt. J. T. M., senhall, 258, 264.

Single Bird.—Section 12.—Heavy.—Hull, J. R., Thornt Fylde, 79, 90; Rainford, J., Penwortham, 74, 81; Paterson, E Tarporley, 76, 78.

Single Bird.—Section 13.—Light.—Parsons, S. J., Musbury 79; Snowden, F., Cowling, 65, 72; Rogers, W., Market Dra 77, 69.

Novice Breeders.—Section 14.—Heavy.—Walker, Miss, Ro sall, 309, 315; Ellwood, W., Galgate, 247, 266; Hargreaves, Barton, 262, 248.

Novice Breeders.—Section 15.—Light.—Ellwood, W., Gal 334, 321; Bradley, R., Hutton, 305, 291; Marquis, S., Greenh 284, 290.

THE CHESHIRE COUNTY COUNCIL EGG-LAYING COMPETITION—SINGLE BIRD TEST.

Report on Results for Fourth Month—7th Jan. to 3rd Feb.,

Both flocks are laying well to date, and the eggs are, o whole, of good size and quality. There are no deaths to re and the condition and health of the birds is excellent.

Figures are eggs laid for month and total points to da

SUMMARY OF LEADING PENS.

Light Breeds.—J. Mason (W.L.), 18, 850; W. J. Fletcher (20, 776; E. Harrison (W.L.), 18, 717; W. T. Griffiths (W.L.), 16 Mrs. Ball (W.L.), 24, 666.

Heavy Breeds.—Mrs. Garnett (Buff Rk.), 23, 850; Live Sana. (Lt. S.), 25, 842; Tansey Bros. (R.I.R.), 18, 773; W Griffiths (W.W.), 19, 761; E. Patterson (Buff Orp.), 19, 692 Evans (W.W.), 19, 685.

Modern Poultry Feeding.

By **TOM NEWMAN.**

THE WELLINGHAM EXPERIMENTS.

may be remembered that last year we tried a l feeding experiment at Wellingham, with a view eeing whether we could find a combination of ins which would allow us to use a minimum quan- of milk, and would give approximately the same ts as the earlier experiments, where 33 and one- per cent. dried milk was used. The result was factory, but the experiment was on too small a to warrant our recommending it. In conversation Colonel Napier, at the Dairy Show. I gave him ormula which he quotes in his letter, and he pro- d to report results to me. I am grateful to him he report, which will be of the greatest interest y readers. The following is his letter:—

" Dear Mr. Newman,—Our first hatch this year vas on the 14th January, and we have had hatches veraging 400-500 chickens coming out every seven lays thereafter. These chicks have been fed in he following manner:—After the first 48 hours hey have been given skim milk, about one gallon er 400 to 500 birds per day, with a grain feed f equal parts Pinhead Oatmeal, Flaked Uveco, nd Kibbled Wheat, and they have always before hem a mixture of equal parts Quaker Oats and)ry Bran. On the eighth day the skim milk and uaker Oats mixture is discontinued, and a mash nsisting of the following parts by weight is given: -20 parts Bran, 45 Middlings, 15 Sussex Ground ats, and 5 parts Soya Bean Meal, 5 parts meat nd bone meal, and 5 parts Maize Meal. The ash is always before them, as well as clean rinking water. Three times a day they have a rain feed of equal parts Pinhead Oatmeal, Flaked veco and Kibbled Wheat.

The results of this feeding have been excellent, d better than any we have yet tried, with, per- ps, the exception of the Marmite feed, which we ed two years ago, but we have had a thing we ve never had before on this farm, and that is Leg-Weakness,' and I have come to the conclu- n that the feeding as set out above is deficient probably Vitamin Fat Soluble A. We have t over this trouble completely by adding one nt of Cod Liver Oil per cwt. to the grain feed ove stated, and feeding a meal of this per day.

Incidentally it may be interesting to know that y cases of 'Leg-Weakness' we have had, we ve been able to cure in half-an-hour to an hour putting about half a teaspoonful of cod liver down the affected chicken's throat. We have en marked the chick with ink, and, as stated, half-an-hour to an hour it has run about with others as though it had never been ill. Since ding cod liver oil no other cases of Leg-Weak- ss have occurred.

Of course it is early in the season yet to pronounce definitely as to this method of feeding, but so far it is satisfactory. Some of the cockerels have weighed three-quarters of a pound at four weeks old, which is fairly good for White Leghorns. We are able to market them as Petit Poussins for the London Market at six weeks old, a week earlier than we have managed before."

The result is very satisfactory, but as Colonel Napier has pointed out, it is early yet to express a definite opinion, and we must not lose sight of the fact that this is an experimental mash. I would like to make a few suggestions, more particularly in relation to the leg-weakness. I am not sure that this trouble is due to a deficiency of Vitamin Fat Soluble A., although the success of the cod liver oil treatment would appear to confirm the opinion of Colonel Napier, but there is another aspect to the question. It may be that the trouble is due to success of the mash, if I may put it that way, and that the cause is the too rapid development of the chicks. A test might easily be made by giving linseed oil in the same percentage as the cod liver oil, or by increasing the maize meal in the mash by another five per cent., and using white maize meal in place of yellow. The former is said to be deficient in this vitamin. Again I would like to see whether leg-weakness will appear in the later broods, using the original formula, and not giving the cod liver oil. Leg-weakness is always more prevalent in the early than the late broods. The whole question is a very interesting one, and we have now the means of testing it. I would like to see it definitely proved if the efficacy of cod liver oil is definitely due to the fat soluble A. Vitamin. If that is the case we may be able to do without the cod liver oil by increasing the maize meal. There is a long way to go yet before we can definitely say that the formula is a really satisfactory one. If any of our members are testing it, I shall be glad to receive their reports. It is being given a further test at Wellingham, and we shall soon be able to publish the first report, and it may be that by collecting all the evidence, that with some modifications, we shall be getting nearer to what we are so anxious to learn. When I drew up the formula I tried to include all the constituents which were necessary for healthy and quick development. We had no leg-weakness at Wellingham, but that counts for little, as the experiment was on such a small scale.

ANOTHER EXPERIMENT.

Mr. R. M. Rendel sends the following very interesting letter:—

" Dear Sir,—It occurred to me the other day that hens might select for themselves a suitable ration, in the same way as pigs. I, therefore, had measured quantities of bran, maize meal, meat and bone meal, Sussex ground oats, middlings, and Sussex ground oats, emptied into the hoppers of a flock of 850 White Leghorn pullets, on one side of the house only, leaving the other half of the hoppers with their ordinary mash. At the end of nine days the pullets had consumed the following quantities:—

¾	cwt.	Bran.
1	,,	Maize Meal.
½	,,	Meat and Bone Meal.
½	,,	Sussex Ground Oats.
1	,,	Middlings.
14	lbs.	of Yeast.

I should be glad to have your opinion of this method of feeding."

If we can induce the Council of the S.P.B.A. to carry out this experiment with the half of the chicks at Wellingham, which are now being tested intensively, we may be able to collect some useful evidence, one-half the chicks being fed in this manner, and the other being run on the usual lines, the same constituents to be used in each case. In answer to Mr. Rendel, it is difficult to express an opinion. In the early stages it is possible that pullets might eat what was most palatable, as against what was most suitable for health and production. That was the experience, I believe, in a short test made in America, the consumption of meat being excessive for the first few weeks. The test to be of any real value should run a full twelve months. I should expect to see some difference in the quantities of the different foods consumed at certain periods. This would be regulated, I think, by production, and not by the seasons or climatic changes. It would probably be found, for example, that the consumption of maize would be greater in April than in October. For the first month of the test anything may happen. The consumption of animal protein would probably be greater than in any other month, but this is rather speculative, so I will not continue.

WYE COLLEGE DUCK LAYING TEST, 1924-1925.

Held in conjunction with the N.U.P.S. and U.D.C. at the South Eastern Agricultural College, Wye, Kent.

This Test, which commenced on November 1st last, extends over a period of 48 weeks. Each entry consists of five ducks, of which there are 155 in all. All the ducks are trapnested, and are run as one large flock on free range over grass land.

For the purpose of awards the birds are divided into four breed classes, viz.: (1) Khaki-Campbells; (2) Indian Runners; (3) Buff Orpingtons; (4) Magpies. Separate awards will be made in each class.

The eggs are graded according to weight, a first grade egg being one which weighs 2 ozs. or over. Second grade eggs are those which weigh under 2 ozs.; these do not count for awards.

REPORT FOR FOURTH PERIOD—Jan. 24th to Feb. 20th, 1925.

The total number of eggs laid during the month has been 2,400, which gives an average per bird of 15.58 for the twenty-eight days as compared with 12.02 for the previous month. The total number of eggs laid to date (in 112 days) is 6,395, which gives an average of 41.52 eggs per bird.

The health of the birds during the month has been good. A certain number of the birds are partially moulting. No deaths have occurred.

The leading position in the whole test is again taken by Mr. W. R. Partridge's Pen No. 19, White Indian Runners, which have laid 428 first grade eggs to date, or an average of 85.6 per bird.

The leading pens in the Breed sections are:—

Khaki-Campbells.—Miss Harrison Bell's Pen No. 11, 379 pts.; Mrs. M .A. Gibson's Pen No. 9, 338 pts.

Indian Runners.—Mr. W. R. Partridge's Pen No. 19 (Whites), 428 pts.; Mr. W. R. Partridge's Pen No. 20 (Whites), 295 pts.

Buff Orpingtons.—Capt. W. O'G. Cochrane's Pen No. 22, 256 pts.; Mr. C. C. Chittenden's Pen No. 24, 165 pts.

Magpies.—Mr. C. N. Goode's Pen No. 26, 186 pts.; Mr. F. Boothroyd's Pen No. 27, 138 pts.

Incubation.

By **R. G. HALL.**

For some time past I have intended to write o
method of incubation with Gloucester 16
machines. I have seen it suggested that it is
to ignore the maker's instructions regarding
removal of the felts in the chick tray (or what i
chick tray at hatching time), and to remove them
at one time on the 19th day; and I have rea
the chick tray being described as a death trap,
with the suggestion that the chicks should not re
in the tray, but be removed to a warmer clim
account of the temperature being usually 20 de
lower than the egg tray. When I first used
machines, two seasons ago, I found that by
removal of the felts on the 19th day, there w
terrible drop in the temperature of the machines u
the lamp was turned up. I might say at the ti
was using Gloucester self-turning trays, and tha
hatches were very poor. I suspected the self-tu
trays to be the cause, and accordingly turned by
and with satisfactory improvement in re
Whether this was caused through our eggs being
(which they are), and not turning perfectly, or wh
the slight jarring was the trouble, I cannot
The method regarding the felts which I used f
greater part of the last season (including
weather), and so far this season, is to put thre
at the commencement, remove one at the end
week, and another at the end of a fortnight,
warm weather, if the temperature seems to h
tendency to rise too much, I remove the first
days, and the second at twelve days. The rem
felt I leave in until the eggs actually begin to
i.e., until I notice a chick out. I then open th
sery drawer (not the glass door which gains ac
the eggs), and take it out. I remove this las
and then remove the hessian covered frame
fits in the nursery drawer I presume its use
help to keep the hessian of the drawer itself
I then place a felt, which is three to four inche
rower, each way than the usual felts (I cut a
this size) in between the hessian bottom of
and the hessian frame, so that 1½in. to 2in. all
the sides is not covered by the felt. Then I
piece of good closely-woven hessian, which is t
of the whole tray, and which is hemmed an
three machines (one hatching each week) a
over the whole, and this keeps all below quite
and is washed after use. I have had chicks
weather (room down to 38 degrees) suffer no
effects from being in the nursery drawer till
hours old, and I have had up to 135 chicks
drawer at once in hot weather without ill resul
when the hatch is over, and the chicks dry, it
to temporarily remove them, and remove the
felt, if they are to remain in the *drawer*. I fi
when one machine comes off each week—which
the eggs in the respective machines are in
stages all the time—that one extra pair of fe
allow the three machines to be run in this

e had two of the machines hatch out once each . year on this method. Eggs turned twice daily, irely. but otherwise not cooled (I never cool them ı in hot weather), temperature as near as possible the first week and 104 after (103 is too low—at rate at this time of the year). First hatch 125 n 148 fertile eggs; second machine—120 from fertile eggs. I ought to say I have fastened a d about half-an-inch thick on to the wire mesh of egg tray from side to side of the machine, to pre- t the eggs from rolling together so much at hatch- time, and to facilitate filling the machines and ing.

ı turning, the tray is drawn out halfway, and those he front side of the wand are turned; the tray is ı reversed and the others turned. Thus the back he tray is at the front after turning, and vice versa ı time. The position of the eggs are not otherwise ıged, except at testing time (usually eighth to h day, once tested only), which, of course, cannot ıelped. Testing is done by an electric tester, one at a time, and the fertile ones placed on the front el of the top of the machine, until one-half of the are tested (i.e., back to the centre wand). The is not removed for this—only drawn out, as in ing, but the other half of the eggs are not tested l the machine regains its normal temperature. I ıot say I could not test all at one time, but I er to keep on the safe side.

s regards the moisture problem, I found if I used two little troughs, during the whole period of bation, that the body of the machine at the two s, where it is against the nursery tray, became wet. In fact, the wood was turning black, with one season's use (new machines). I think, after oration, the water must partially drop down under troughs in vapour, so I take the troughs out, as I k the side eggs get the warmth better with them oved. I replace and fill them once about twelve s before I expect the eggs to pip, but to substitute removal of the troughs I have placed a large wash- bath (galvanised) under each machine. These s are 30 inches long, without counting handles, 23 inches across, and are first filled with dry saw- , then pushed under the machines, and filled up water from a water can; they take from eight n gallons of water each. It is difficult to get the ace sawdust wet at first, and this is done by a yer or syringe. Thus the source of moisture is ght up much nearer the machine than would be case with just a shallow tray. I found last on that this sawdust kept wet the whole of the on without adding further water, and did not asonably decompose. It only turned a little er in colour. At the end of the season it was of se removed, and has been replaced with new saw- this spring.

s regards turning, I ought to have said that the are first turned when they have been in the hine 36 hours, and that I continue to turn until the ing of the nineteenth day, and with reference to g the wand across the egg tray, I ought to add care must be taken to fix it in the most economi- osition. In my 160 machines I get eight rows of

(Continued at Foot of Column on Next Page).

Bees.

By E. W. D. MADOC.

RACES OF BEES.—II.

Next in importance to the Italian comes the English Black or Native bee. Before Acarine Disease became a serious menace the English Black bee was a universal favourite throughout Great Britain. The English size of hive and methods of management were well suited to this bee, and fairly good results were general.

While not so prolific as the Italian, they build up steadily in the Spring, and work willingly in the section supers, showing but little inclination to swarm. In addition to this they always leave a large air space between the honey and the capping of the cell, giving their comb honey a beautifully white appearance.

In their purity they are fairly quiet and easy to handle, although hardly so gentle as pure Italians. The queens are rather hard to find, because the bees are nervous under manipulation, generally tending to collect on the ends and bottom of the frames in clusters, but the most serious objection to the Native bee lies in its extreme susceptibility to disease, especially Acarine Disease. Whole apiaries have been completely wiped out in a single season, and as yet there is no means of prevention or cure while still retaining the English stock.

The cross resulting from the mating of a pure Italian queen to an English drone is a decidedly good bee, fairly resistant to Acarine Disease, and a first-rate worker. They are not so good tempered, however, as either of their parents.

The Dutch bee has become fairly well-known in this country, following the large importations made by the Ministry of Agriculture, shortly after the war, in an effort to build up the bee population of this country, after the havoc caused by Acarine Disease. They have not proved to be very popular on the whole, mainly on account of their excessive swarming propensities, which are exceedingly hard to control. Apart from this they have several good points; they are reasonably quiet under manipulation; they build up their stocks in the Spring with amazing rapidity, and are good honey gatherers and comb builders. The three outstanding features of Carniolans are gentleness, excessive swarming, and prolificacy; the pronounced swarming tendency is their greatest fault. They are good honey gatherers, the cappings to their combs are extremely white, and they deposit very little propolis or "bee glue," which makes the hives easy to manipulate.

Banats are almost identical with Carniolans, except that the swarming tendency is less pronounced. Cyprian bees have many good points, and have been credited with very large yields of honey. Unfortunately, they are extremely bad tempered. Many bee-keepers have tried them, but most have quickly discarded them, because they were so cross as to be almost unmanageable.

Cancasian, Punic and Egyptian bees have been tried in this country, but only on a small scale, and reports are too contradicting to be of any value, except in the case of Egyptians, which appear to be almost useless under English conditions.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

SOME EGGS.

I have spent a very pleasant (?) hour examining some 250 eggs which have arrived during the last four days, from eight different members. I am not telling you this to make you envious, but because the report on these eggs, and why they did not hatch, may be helpful. The lady from Birmingham, who sent hers by post, and enclosed stamps for the return of the box, may have same if she will write for it. I can't decipher her name and address, and as for the stamps—well, when they get mixed up in an omelette, you can't do much with 'em. The first lot of eggs came from North of the Tweed; they came (so the sender informs me) from a big winner at one of our laying tests, and every one was infertile. As he had to discard 60 per cent. similar to these, at the first test, there is no need to discuss his method of incubation. The second lot are from Norfolk. In every case the egg contained a chick, but only one had passed the 16th day. There is obviously something wrong with the incubator; I suspect the temperature. The eggs were not at fault here, and there is no evidence of excess of moisture or lack of ventilation; the operator should look to his thermometer. The next is five dozen from Lincolnshire, divided into two lots. In the first undoubtedly the stock birds are at fault, the percentage of infertiles and addled eggs was very high, and only two chicks had reached the 18th day. In the second lot it is a different problem, nearly every egg held a fully-developed chick, but they completely filled the shell; it is a case of too much moisture without ventilation. The next lot is from Bedfordshire. Here again the stock birds are at fault; seven infertiles, one chick, and the remainder dead germs. But what is the cause of this? The writer suggests that the cock is overmated—possibly that is so. It is a better explanation than his suggestion of too much moisture. Another lot from Derby. The writer says she has put wet flannels on the eggs during the 18th and 19th days, before finally closing down; the chicks completely filled the shell. There is no need to dwell on this failure. I have had three letters during the last ten days, reporting bad failures when the advice to spray eggs has been followed; such general advice should not be given. I illustrated this when I quoted the American who declared he had discovered a means of preventing dead-in-shell by wiping the eggs over with a wet rag on the 18th day. Some who followed had better results, others had much worse. It is really a case of studying your own conditions, as to h much moisture you should supply.

THE SUSSEX CLUB

Year Book is to hand, and is again an interesti compilation. The secretarial report states th an effort was made to find out who were bona-fi members of the club. The result was that 2 names, which appeared in the 1923 Year Boo were written off; against this there were 79 ne members, of whom seven were life member Financially the club is in a very sound conditio The club standards for all varieties are publishe and there are many interesting comments on t Sussex, in the North, South Wales, Scotlan America, Ireland, South Africa, Transvaal; wh the judges' report of the shows is excellent every way. It is a useful book for all lovers the breed, and can be obtained from the Secretar Mr. Clem Watson, Oxhey, Watford, for 1s. 3 post free.

THE BREEDING SEASON.

In spite of the abominable weather, the breedi season so far seems to have been fairly goo Complaints of poor fertility and hatchability ha been comparatively few; and I have not heard any serious outbreaks of disease. Several ou breaks of B.W.D. have occurred, but they do n seem to have been so serious as last year. I ha been asked whether it is safe to keep survivor In the case of those which have not actual suffered from the disease, there would appear be no great risk in running them on; but it shou be very definitely stated that these birds shou on no account find a place in the breeding per their career should be finished as pullets, for the is every probability that they will be carriers, a the risk of breeding from them is far too gre to run. Only a few cases of coccidiosis have bee reported. Everyone should make himse acquainted with the symptoms of this disease. there is careful observation, and drastic steps a taken immediately, it is possible to stamp it ou but the difficulties increase if there is any neglec It should be distinctly understood that there no cure; chicks may survive an attack, but th never recover. Generally the chicks are attack at three to four weeks' old; after six weeks th seem to be able to resist it. The external sym toms are fairly clearly defined, the most mark being the tendency to huddle under the hover, t constant closing of the eyes, a whitish brown di charge from the vent, sometimes accompani by blood. One expects the drooping wings, a

---

INCUBATION.—Continued.

eggs, each side the wand (ten eggs in each row carefully placed), the sides of the eggs against t wand, laid triangular to one another, and with t small ends towards the centre of the tray.

“ moping ” ; they are symptoms exhibited by
sick chicks. The only effective method of con-
ling with it, that I have ever been able to dis-
er, is to kill and burn all sick chicks at sight ;
't hesitate, remove the others to fresh ground,
continue to do so. It is almost useless to
mpt to contend with it as long as the chicks
ain on the same ground, because the egg of
parasite is voided in the droppings and picked
by other chicks. Care should be taken that
mash hoppers and drinking vessels should be
laced that they cannot be fouled. In addition
his, 15 grains of powdered catechu should be
n in each gallon of drinking water, and the
ks allowed nothing else to drink. In fighting
disease you must harden your hearts, and re-
ber there is no cure, and that survivors are
gerous birds. By survivors I mean those that
suffered from the disease and not succumbed.

THE DUAL-PURPOSE FOWL.

essrs. P. and G. Lively, writing on the Sussex
in America, say :—

“ The day of the layer, pure and simple, has passed. The hen that is only an egg machine has lost, or is fast losing, its appeal. The egg fiends have over-reached themselves, and to-day the dual-purpose fowl is coming back strongly into popular favour.”

wonder whether that opinion would be sub-
ed to over here. At present I should not like
ay, but it is by no means improbable, but we
t the ideal breed. Perhaps in seven or eight
s' time we may see it, for without doubt we
the material with which to make it. What
d be the ideal—can any of my readers suggest

EAST DEVON BRANCH OF S.P.B.A.

e First Annual General Meeting of the above
e held in the Palace Theatre, Ottery St. Mary,
hursday, March 26th, 1925, commencing at
n. President A. T. Loram, Esq., J.P., in the
.

e following gentlemen will address the meet-
—Mr. Tom Newman, Major C. H. Eden, Mr.
olin Ross, B.Sc., Mr. Edwin Russell.

ere will also be forty-five minutes of the most
taining Moving Pictures, illustrating various
ches of the Poultry Industry (films by kind
ission of the Ministry of Agriculture and Mr.
ostock Smith). Admission to the general
c 5d. each.

rther particulars and tickets for reserved
may be obtained from : Capt. H. M. Jelley,
Secretary, East Devon Branch, Broad Oak,
Hill, Ottery St. Mary, Devon.

THE FOOD PURCHASE SCHEME.

Very great interest is being taken in the scheme, and we are now in a position to supply any of our members, or group of members, with lots of not less than two tons. Price lists will be sent on application. It should be quite understood that these can be mixed lots, thus they may be made up of :—

5	cwt.	Middlings.
5	,,	Bran.
3	,,	Sussex Ground Oats.
2	,,	Maize Meal.
2	,,	Fish Meal.
1	,,	Soya Bean Meal.
2	,,	Wheat,

or any other foods which the group may wish to buy. All bags are free, and packages will be in one cwts. No smaller quantities can be sent.

Mr. Hemelryk's suggestion has been adopted, and mashes made up to my formulas can be sent to those who require them .

A large number of members have written to say they will form “ one of a group,” but this does not help us in the least, nor does it help them. Surely they can take the initiative, and form a group in their area? After all it only requires calling three or four other members together, and talking the matter over with them. From many points of view I think the smaller the groups, the better.

The scheme will be a great success if our members co-operate with us as far as possible, and realise what a great saving there may be. I am, of course, more particularly referring to those members who do not keep a large number of fowls.

A great many questions have been asked as to quality. Samples will be submitted to me weekly, and that is a matter which will receive the most careful attention of the Council.

All we ask you at present is to remember that the scheme is in its infancy, and is capable of great development; but far more depends upon those who wish to take advantage of it, than upon the Council, and will members please understand that all business *must* be transacted through these offices. Under no circumstances will members be put into touch with the firms direct.

Chesterton Hall, Cambridge.
24th February, 1925.

Dear Sir,—Thank you so very much for your most kind letter of advice. I shall at once act on it. I never expected a letter back, but thought in the far future I might see a reply in “ Eggs.” It is wonderful to feel that in a real emergency one could get such help.

Gratefully yours,
(Signed) (Mrs.) MABEL PIERCE.

Banham, Attleborough. Norfolk.
14th February, 1925.

Dear Sir,—Seeing week by week in “ Eggs ” the appreciation shown by the testimonials of the readers of your excellent paper, and not to mention the S.P.B.A., I think it about time I added my name. Since becoming a member of the S.P.B.A., and perusing the columns of “ Eggs,” I feel I have learned a lot of the science of poultry keeping, and cannot praise your society and paper too much.

Thanking you again.

Yours sincerely,
GERALD L. CASTLEDEN.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

H. M. G. (Bath) sends three samples of dry chick corn. No. 1 is a poor sample, consisting principally of kibbled maize, millet, with some crushed wheat thrown in, and a little canary seed. In No. 2 the maize is rather coarsely ground, but apart from this it is a nice, clean sample, consisting of groats, cracked maize, cracked wheat, with a little canary seed. No. 3 contains far too much millet, a little linseed; and of the three I much prefer No. 2.

J. A. W. (Tiverton) sends two samples of S.G.O. Both are of fair average quality, but I prefer "A." Two samples of meat and bone meal. No. 1 contains an excessive amount of bone; No. 2 is the better of the two, although there is quite enough bone in this. Two samples of meat meal. No. 2 contains bone, but is preferable to No. 1, which has rather an acrid smell.

X. X. X. (Andover) writes: "Out of 42 chicks hatched I have lost, up-to-date, 15; all presumably from B.W.D. Major Saunders examined four, and reported 'all infected by B.W.D.'" He wants to know whether the survivors are fit for the breeding pens. Supposing that the infection has been carried to the laying stock, will they necessarily become carriers, and, therefore, unfit to breed from next season? Are there any means of testing the males and females in a breeding pen for the presence of these germs by blood or other test?—In reply to X. X. X. the question whether survivors are fit to breed from or not depends upon whether they were natural immunes, or whether they have had an attack and survived. In any case, however, I would not run the risk. There is more research work to be done in this direction. He would be wiser not to breed from these, and I would lay it down as a general principle, that the survivors of any brood should never find a place in a breeding pen. (
I do not think that the infection would be likely
have been taken to the laying stock. If they becam
infected they would necessarily become carriers. (
There is the Blood Agglutination Test. Such a tes
although not absolutely reliable, is the only means
which at present we can put up any fight against th
disease; but it should be thoroughly understoo
that under certain conditions a carrier wi
not react to this test, and that American Experimen
have demonstrated, for it to be absolutely reliable, th
birds should be tested every six months. I woul
refer my correspondent to Major Saunders' splendi
article on this subject which appears in this issue.

R. T. B. (Warrington) writes that he has 120 chic
hatched, which are going on well so far, but durin
the last day or two some of them are coughing. H
picked out some of the chicks, which he found to
affected, and separated them for some days; then
found another one. His treatment was 40 grains
citrate of iron and quinine to the gallon of drinki
water. This resulted in no improvement. On furth
enquiry I find that he is using peat moss as litter, an
I have not the least doubt that the dust from this
causing irritation of the respiratory organs, and if
removes, or at least damps it slightly, he will hav
no further trouble. It was a wise precaution to gi
the citrate of iron in the drinking water in any cas
but the peat moss is the real source of the trouble.

J. W. (Chesterfield) has three pens of R.I. Re
In No. 1 the cock is three years old and 5 pullet
No. 2 a cockerel and 9 one-year-old hens. No.
the same. The pullets in No. 1 are own sisters
the cockerels. The hens in Nos. 2 and 3 a
daughters of the cock in No. 1. He wants to kno
if he shall be mating too close if he keeps th
cockerels from No. 1 pen to mate to the daughte
of pens two and three. The pullets are of go
colour and size, and are also laying well. He
trapnesting them, and one of them has laid
eggs in 90 days, the others 68, 64, 60 and 58.
have so often pointed out that it is not a questi
of going "too close." If you have two real
superior individuals there is not much to fear fro
close mating, even if brother and sister, but th
question is as to what is superior? By this
want size of body, size of egg, constitution
vigour, besides good type, and in a breed like th
R.I. Red, good colour. If there is any weaknes
such a mating as my correspondent mentions w
intensify it. My own advice to him is not to u
cockerels from any of these pens with his ow
stock in 1926, but to go outside and get birds wi
good records, more particularly for the wint
months, and see that they have come from he
which have finished well, and laid good-sized egg

G. R. R. (Rugeley) has chicks which are a
off their legs. They are about two weeks old, a
they have been given sharps, maize meal, me
meal and bran mixed with separated milk. I

o wants to know when he should start giving
isture in the incubator which is in a damp cellar.
hink his chicks are suffering from leg weakness,
:ause the feeding is too stimulating. As he is
ing the separated milk, it would be advisable
stop the meat meal. Further, he should not
much maize meal. He does not say in what
portion he is using this, but I am inclined to
nk he is overdoing it. It would be a great
vantage to him if he were to use S.G.O. with
s mash. With regard to the moisture in his
ubator, I do not think he should use this until
15th day, as far as I can judge from the con-
ions he describes.

. Y. (Ashley) has had a bad hatch, and had to
p 33 chicks out of the shell—16 of these have
d and the remainder are very sickly. He wants
know how he shall treat them. I will be brutal
be kind, "X.Y." Knock them all on the head
l burn them. When you have had more experi-
e you will know that the chick which is helped
of the shell is not worth keeping. I have tried
nany scores of times in my life, and never knew
per cent. reach healthy maturity. Now as to
cause of this bad hatch. It was undoubtedly
to the fact that you closed the ventilation holes
your incubator for the first fortnight, and sup-
d moisture from the first, consequently the
poration from the eggs was too slow, and the
cks did not develop. Your feeding is not the
se of this bad hatching, but there is nothing to
gained by combining maize germ and maize
al. It would be better to replace the former
ground oats.

. K. S. (Hartlepool) thinks that I shall call
"very silly" because he has been using a
tain, much advertised, spice, and it has not
ught eggs as the advertisers say it does. On
contrary, some of his pullets have gone purple
he comb, and generally they are badly out of
s. Now he wants to know what to do. No, I
e to be tactful, "E.K.S.," or at least try to be,
will merely say that spices are not conducive to
egg production, and you try and read be-
en the lines. As to what you should do, give
birds a mild dose of Epsom salts, supply
ty of fresh green food, and see that they get
ty of exercise. This should put them right in
tle while.

Sussex" (Hunslet) is very worried. Among
Light Sussex he has found three pullets and
ockerel with distinctly yellow legs. He has
l them pure himself for three years, and pur-
sed them originally from a friend whom he
ight he "could trust," and who also declares
ored them pure, so "Sussex" wants to know
all this arose. He can still trust his friend.

This is but a case of reversion. The Light Brahma was used in the mating of some strains of Light Sussex, and the yellow leg is derived from this breed. Occasionally it reverts. In reply to his second question. Although Buff Rock cockerels mated to the Light Sussex hens would give chicks, the sex of which could be distinguished at hatching, the pullets being buff and cockerels white or silver, I can see nothing to be gained by such a cross, and would much prefer Brown or Buff Leghorn males.

POST-MORTEMS.

E. A. J. Pneumonia was again the only lesion to be found in the chicks, but the circumstances are so suspicious that I am making a bacteriological examination to determine whether this is only pneumonia or merely a symptom of B.W.D., or other infectious disease. The sample of sorghum was of good quality, but I am always rather nervous of this seed, especially when ground, because under certain conditions of fermentation it may become poisonous by reason of its glucoside, durrin, forming hydrocyanic acid from enzyne action. I will inform you in the course of a few days of the result of my bacteriological investigations, but I should advise in the interval the presumption that this disease is infectious, and take necessary measures for the prevention of spread.

H. St. G. M. The only lesions to be discovered in the case of the two chicks were those of pneumonia, a disease which I consider it is always best to deem infectious. I should isolate these birds, and give them the iron and quinine in the same dosage as the others are getting. I am sorry the losses were so high among the birds affected with coccidiosis, but if the remainder were as badly diseased as the ones I examined, there would be little chance of their recovery.

W. B. The post-mortem examination of the three chicks showed the cause to be pneumonia in two of them and peritonitis from a decomposed yolk sac, that had not absorbed. I should advise isolating these birds, and giving them forty grains of citrate of iron and quinine in every gallon of their drinking water, and the addition of cod liver oil to the mash. It is quite possible that there may be some defect in the ventilation, or in the heating apparatus, and if such is found to be the case, immediate steps should be taken to remedy the same.

Brands Hill P. and Fruit Farm, Colnbrook, Bucks.
23rd February, 1925.

Dear Sir,—Before closing I should like to pay a tribute to "Eggs," both for general information and as an advertising medium. Last year I had a small local trade, and sold several hundred eggs only, while this year I have already sold several thousand, and am sending to all parts of England.

You are at liberty to use this if you desire.

Yours faithfully,
(Signed) STANLEY R. LANE.

B.W.D.

By **Major C. G. SAUNDERS, D.S.O., B.V.Sc., M.R.C.V.S.**

For very many years, long before the keeping of poultry became an industry, white diarrhoea was recognised as a cause of mortality among young chickens, and various reasons were given as to the cause, chill, the hen leaving her chicks, running in the grass before the dew was off, and so on. But it was not until the keeping of poultry assumed the importance it now commands that any really serious attention was paid to it. The losses were comparatively small, owing to the small unit system of the broody hen, but as time went on and the system of hatching and rearing huge numbers of chickens by artificial means came into vogue, it was soon recognised that something would have to be done or the industry could not survive. The earlier investigators assigned the cause to the invasion of coccidia, later the Bacillus Pullorum was discovered to be the sole cause of what we now call Bacilliary White Diarrhoea, a disease quite apart from Coccidiosis, or the diarrhoea arising from digestive disturbances.

In a way the name Bacilliary White Diarrhoea is a most unfortunate one, for the very reason that it implies that diarrhoea is of necessity a prominent feature of the malady, and the term is very apt to mislead poultry-keepers that have had little or no experience of the disease into thinking that no diarrhoea, no B.W.D. Such, however, is far from the truth; the disease is in reality a septicaemia, the bacilli circulating in the blood, and capable of being found in nearly every organ of the body, and so of producing conditions in those organs that are peculiar to their structure and functions.

The cause, then, is the Bacillus Pullorum, or as the germ is a non-motile one, more exactly the Bacterium Pullorum. It is a slender rod that grows at blood temperature on most of the artificial media, and stains with the ordinary aniline dyes, but is what is termed Gram negative, a peculiarity of staining that places it in a certain group of micro-organisms. A very great deal has been learned about the bacterium, and it has been definitely classified, and thus its identification when grown from a suspected subject has become a mere matter of routine. Unfortunately, although so much has been done in the way of identifying the cause of this disease, little or no progress has been made in the way of prevention or treatment, the latter at present being particularly hopeless.

The mortality from B.W.D. is very high, sometimes as high as 100 per cent., and it would probably be all the better for the industry at large if that figure always pertained, as the birds that do survive are not only weakly and of poor constitution, but a certain percentage of them remain as "carriers," harbouring the germs in their ovaries, to pass them on through their eggs to their descendants. In this way the disease is perpetuated, and the vicious circle completed, whereas if all the infected chicks had died or had been destroyed, the main source of the trouble would
been done away with. Infected eggs, however
not the only agents that cause an outbreak, wa
care, in neglecting to disinfect contaminated e
ment and premises, day-old chick boxes, retu
hampers, and such like, and besides there is al
the possibility of contagion being brought in by
boots of persons, and wheels of vehicles, that
come from an infected area.

Symptoms. In many of the works on po
diseases considerable space is devoted to the des
tion of distinctive symptoms, but these from my
observations, and from records compiled from des
tions of hundreds of outbreaks, are little to be r
upon for diagnostic purposes. It is true that
are the general signs of malaise, huddling toge
drooping wings, and staggering gait, but these
also symptomatic of practically any toxaemic c
tion. The main symptom that is too much relied u
viz., white diarrhoea, is frequently conspicuous b
absence, and the full belly and pasted vent are
present both in Coccidiosis and digestive disorders.
the great majority of cases death occurs sudden
after a short period of dullness, or stupor, with
sign of diarrhoea being seen.

The fact of deaths occurring in great numbers
ing the first ten days of life, and which canno
attributed to any breakdown in the managemen
far more significant of this disease than any
symptom or combination of symptoms that are
posed to differentiate it from other maladies.

Diagnosis. This can only, with any certainty
made by a post-mortem, or in many cases, a bact
logical examination. It has been stated by
experts that it is only by the latter that this di
can be identified, but this statement is too swee
as it is only in doubtful ones that it is really neces
although, of course, if time permits, it is most
able. I say if time permits, because an exhau
test is a matter of days, and, in my opinion, it
far greater importance to the breeder, that he sh
be warned that there is a suspicion of infecti
disease at the earliest possible moment, than tha
dictates of science should be satisfied, the troub
the meantime raging unchecked, and causing h
not only in the affected brood, but among others
are in contact with them. To the practised eye o
pathologist there is little or no difficulty in recogn
the lesions produced by this disease. It is when d
has taken place so rapidly from an acute infec
leaving little or no traces, that the bacteriolo
examination is imperative to establish the cause
will try and describe the post-mortem appearanc
a typical case, but the reader must remember
there are many variations, or, shall I say, intens
of these conditions, and that he must not expect to
the same typical picture in every case examined.
digestive canal contains little or no food, but is
distended with gas, and gives the general idea of
somewhat congested, but the main point of devi
from the normal to be found in the caeca. In
of being of a brown or greenish colour, with s
and thin walls; the colour is pale yellow, the
being slightly thickened, sacculated, and presenti
striated appearance from the number of fine

sels transversing them. Both caeca are enlarged,
l contain a muco-purulent material that fills them
npletely, and extends downwards to also fill the
tum. The normal constriction of the caeca, where
y join the rectum is obliterated, the calibre of the
ns being nearly equal throughout their extent.
e lungs are usually in a pneumonic condition, and
many cases filled with small white tubercles. There
also white patches to be seen on the heart, and the
er presents a streaky appearance. As in the case of
y febrile disturbance, the yolk sac is generally un-
sorbed, but this has little diagnostic significance as
as B.W.D. is concerned. An examination of the
in shows that, in a great majority of cases, both
and its coverings are in a state of congestion, and
s is particularly noticeable in birds that die from a
-acute attack.

Prevention. Taking into consideration the hopeless-
ss of treatment, preventive methods appear to be
only salvation in the fight against this terrible
lady that causes such grievous losses, and in my
inion it is only by co-operative measures and in-
idual sacrifices that it will be possible to gain control.
e ideal, of course, would be to breed a race of bird
mune to this disease, but even if this were possible
ny years would be necessary before this could be
complished, and, in the meantime, the work of
vastation goes on. It will be admitted that the
carrier " hen is at the root of the trouble, and that
e is, for the most part, a survivor from an attack of
disease; hence the elimination of " carriers " is
e essential in any scheme for the control of this
sease. The agglutination test helps in this respect,
d is a most valuable aid, but the elimination of the
ssible " carrier " should take place before she ever
aches the breeding pen. The fact that the Bacillus
llorum is introduced into the yolk from the diseased
ary of a " carrier " is now a matter of history, but
me recent researches that I have carried out also
ove that both the shell and lining membrane are
rmeable to bacteria, the B. Pullorum among them.
is shows that infection from the outside is
ssible, either from infected hands, or from germ-
len droppings that frequently soil the eggs, and it
so shows the advisability of handling eggs with clean
nds, and the cleansing of the eggs themselves before
ing placed in the incubator. Other details of control
the thorough disinfection of premises and equip-
ent have already been discussed, so no more will be
id about that essential detail; but the conclusion has
en more and more forced upon me that the quickest
d most profitable method of controlling B.W.D. is
e slaughter of the entire affected brood when once
e diagnosis has been established.

East View, Irchester, Northants.

Dear Sir,—I wish to take this opportunity to express my very
eat appreciation of your paper " Eggs," which has been and
a very great help to me. I often say to my friends, " When
doubt on poultry matters turn to ' Eggs.' "

Yours faithfully,

(Signed) HUBERT J. FROST.

Correspondence.

FOOD PURCHASE SCHEME.

To the Editor of " Eggs."

Dear Sir,—As a genuine, though moderate Egg Farmer, I am interested in the proposed Food Scheme, and am wishing, if it pays me, to get my foodstuffs in two ton lots as an individual. I note you invite constructive cricitism suggestions. I am doubtful about construction, but I can make a suggestion. In the first place I should like to ask a question. Why cannot we be put in touch with the wholesale firms, and deal with them direct? Why should we have to order through the Society at all? Presumably, our money would be banked and fresh cheques drawn. This must entail delay and extra expense for clerical work and stamps. It seems to me a clumsy way of doing business. Now where is the weak place in egg farming to-day? I fancy it arises from the fact that we egg farmers are not yet recognised for what we are. I protest against the notion that we are peculiar people needing special treatment, as some letter-writers in " Eggs " seem to think, and even the notion that we must hang together, and be kind to one another—the big men helping the small men—simply will not wash. There can be a good deal of humbug underlying the word co-operation. For some people it seems to connote a lazy sort of incipient communism—a general sharing of cloth all round. Many so-called co-operative societies are merely ordinary trading concerns, slightly under-cutting local corn dealers. One can illustrate their point of view by imagining a cheap jack broadcasting. What would he say? "Hullo, Hullo, Everybody. Come along now, wake up and listen to me. But don't think about me. I want you to think of yourselves and the glorious possibilities of co-operation, therefore, co-operate and come, not singly, but in battalions, and buy, buy, buy." And on another wave-length there is a goblin chuckling: "Good Lord, what fools these mortals be!" However, to come to my point, I ask: What is egg-farming? and I answer—Just an ordinary common-place manufacturing business. There is no difference fundamentally between making eggs, making toffee, making beer, or making jam. In each case you are turning raw material into a finished product, and you do it by means of your machinery or plant. The birds are merely part of the machinery, much of which has to be scrapped and renewed year by year. That is merely a special characteristic of the egg-making business, and should be taken into account before we start. There exists, however, to my mind, a genuine hardship which we are justified in complaining of. I imagine for a moment a jam manufacturer buying his fruit and sugar from retail grocers. It would be absurd. But is not that just what we (smaller men, at any rate) have to do—to get raw material from retail corn dealers? So far as I can gather the big wholesale firms simply prefer us to any Co-operative Society in our district, which comes to the same thing. Why? If not because they misunderstand us and our position? A genuine corn factor reading this may feel hurt and say: "Why should I have the bread taken out of my mouth?" That again illustrates my point. He is wrong. His business is to supply feeding stuffs to people who keep live stock, but egg-farmers do not keep live stock at all, in the usual meaning of the term, and my contention is, we ought, as a matter of course, to be entitled to get our raw material from the same source, and on the same terms as a corn factor gets his stock-in-trade. Why cannot we? Because of ignorance. The fact is egg-farming is still comparatively such a new industry in this country, no one, apparently much before 1912, having thought of devoting himself and his capital to the production of eggs in bulk for the wholesale markets, that we are supposed to be merely keepers of live stock, part and parcel of the fancy, instead of ordinary manufacturers. No doubt the existence of the vast army of poultry-keepers, and very small poultry farmers, or jobbers, is largely responsible for this. To conclude, then, my suggestion is that the society, having apparently already explained matters to certain wholesale firms, it should only be necessary to introduce us to them, and more particularly them to us, so as to protect us from the sharks that infest the country to-day. Since cash must be sent with order, they can run no risk, and one might expect that after a time, knowing individual farmers, they would be willing to give whatever credit they are accustomed to give to small retail corn dealers. One practical idea occurs to me. If we deal direct it may suit some of us to engage local haulage contractors, and so save the handling on the railway and the cartage from the station. It is a little difficult to see why the "success of the scheme" should depend on many members joining in. It ought to be a matter of course for the wholesale firms to supply egg farmers equally with retail corn dealers. And obviously if a man cannot order two tons for himself he must join with others to bulk the order. That is true Co-operation, and what, I fancy, so-called Co-operative Societies were originally supposed to do.

Yours faithfully,

F. G. WITT.

For reasons in which it is not necessary to enter into here, we may say that it is quite impossible for the purchaser to be put into direct communication with the wholesale firms. That is one of the conditions on which they insisted when we entered into negotiations with them.—(Editor).

COMMUNITY POULTRY FARMING.

To the Editor of "Eggs."

Sir,—Mr. Lester Spurgeon, writing in your issue of 21st January, describes a method he would choose for making a living from hens. He outlines a system for obtaining eggs, pruned severely of all side-lines—an effort after mass production, so dear to the efficiency expert of to-day. This, he thinks, would make life "far more agreeable than everlasting attention to endless details that all side issues of poultry can mean."

I have never been on such a plant, but I o hoed corn by hand in Ontario for eight wee and the job suffered from the defect that mi qualify the pleasure of Mr. Spurgeon's ideal— was dull.

Rather inconsistently Mr. Spurgeon then co mends the habit of the "Colonists" of doing w for themselves, which under ordinary circu stances an Englishman at home gets done a pays for, but this, while pleasing me by introduc variety, catching salmon for example instead buying fish meal, surely displeases him by int ducing detail.

I wonder if your readers are interested in t sort of thing?

Twelve years ago a man and his wife came one of these islands in the Straits of Georgia w an idea of making a living off the land. Th were English, green and city bred. The Isla are no farming country, and they bought badly that. Their only market then was Vancouv reached by a little steamer once weekly, and t other settlers, loggers, fishermen, remittance m settled down to enjoy the joke. Their land h been forest until the year before, and was th uncleared, unfenced, undrained, covered w loggers' debris. Such land costs, on an avera £60 per acre to prepare for ploughing. In j one year their capital was gone, and nothing sembling a farm had taken its place. The wom held on to the poultry and improvised—the m got odd jobs round about and grubstaked. Exc for their tools, house, land and experience th were broke. Now the stage is set for a "do yourself" act. This, sir, is good fun if you built that way. With tools and experience you c cut your encumbering fir logs into six foot lengt and make pickets and rails; you can cut s cedar logs as you are lucky enough to possess i six foot lengths and make fence posts, and ro ing which will last fifty years, and so you g scratch pens and rough (well-ventilated) hous built and a patch fenced, coon-deer and m proof. If a coon gets in and you get the coon for you've learned how to trap—his skin is wo five dollars, and that just exactly pays your tax and if a deer jumps your fence you get him n time, and share him up with those same neighbo whose grin is now fainter, and while you are o in your boat after shell grit a troll behind m get a salmon, or again may not. The place lat occupied by the raw material of your fence a pens is now occupied by a patch of potat (thriving) and other vegetables (very sickly), a you've got a cow, and split more cedar to hou her, and acquired much interesting knowledge certain esoteric veterinary matters, and can mi Readers of Well's may remember his list of M Polly's spare-time jobs at the Inn—it occup about a page of close type. A poultryman h

ıs little to spend except for food—it's no grain
ountry, or we would grow that too, but for
riety of detail of a day's work we've got Mr.
olly beat. Quite apart from the ordinary farm
ork, such as care of cows, for you raise your own
ilk (and cow hunting in the forest after dark),
re of horse (for you do your own hauling), care
an acre of garden (for you raise your own food
om potatoes to asparagus and mangels, and kale
r the stock), apart from these you are your own
rpenter, shingler and painter, fence builder, boat
pairer. You blast your own stumps, and you
tch and cure fish for yourself and your flock (with
little for the cow, too), and you make your own
ead and butter, jam and wine (from your own
apes, unless, as happened once, the squirrels
t them all green for storage purposes), you be-
me a shot of sorts at grouse, and an occasional
wk, and a more than occasional blue jay, and
u can hit twice in the same place with an axe,
d after a while the settlers forget that you're
glish and the grin fades out. Your ten acres has
anged under your hand, and a farm of your own
king, complete from trapnests and pedigreed
ock to dog kennel, has taken the place of the
ite unlovely loggers' leavings. You aren't
king much, but you are spending still less; you
e surrounded by forest, mountain, and sea, and
you've not much time to look at them you have
l less to be dull.

Two anecdotes—I hope they won't be the last
aw which consigns the whole to the basket into
ich all tripe goes :—

1) From "Life."—A Ford employee lay dying.
work in the factory had been, while seated at
bench, to receive from his left-hand neighbour
laned board; from a box in front he took a screw,
erted it into a ready-made hole, gave it one
f turn and passed the board and screw on to
right-hand neighbour. To his deathbed came
company's welfare worker. "Had he had his
re of the Company's benefits all right—the free
certs, the automobile, all the uplift?" Yes
ad had them all. "Had he then any request—
ld the Company make his passing easier?"
ll, there **was** one thing. Could he—might he
e a board brought to him before he died and
him drive one screw right home? Do you get
craze for "endless detail?"

2) From "Life" (local). A man mending a
d out in the bush by himself needed some split
ar for a culvert. He had no saw, no hammer,
iron wedge, but he had an axe. He cut down
nedium-sized cedar, cut off a ten-foot length
notched a diameter. He cut down a tough
e hemlock spruce and chopped it into two
den wedges. These he inserted into the
h, and drove them home with the flat of his
, splitting the log into two and then four. He
le his culvert and went on to the next job.

hich do your readers prefer——or you Sir?

Yours faithfully,

haletown, B.C. JOHN POOL.

INDIAN EGG-LAYING TEST.

This annual event has just come to a close, having taken place at the U.P. Poultry Association Model Farm, Lucknow, during the winter months. The competition attracts entries of a very high-class of poultry from breeders of repute from various parts of India, as well as from leading farms in Great Britain and Australia. Overseas birds are sold at the conclusion of the test. The specials, cups, and certificates awarded by the U.P. Poultry Association are coveted honours, both abroad and home. The advertisement of a win at this test is of no small value to the breeder. The following are the list of special prizes:—

1. Cup for the best layer in the Test, presented by H. E. The Governor, U.P.: Capt. Mayo, M.C., Mahan, with White Leghorn laying 68 eggs in three months. 2. Cup for the best layer from India, presented by the Stewards of Races, Lucknow: Mrs. Grain, Ranikhet, with Australorp laying 63 eggs. 3. Cup for the best layer from overseas, presented by the Stewards of Races, Lucknow: Warwick Rogers, England, with White Wyandotte, with 59.8 eggs. 4. Cup for the best team of four birds entered, presented by the Right Honourable Lord Dewar, England: Warwick Rogers, England, four birds totalling 231 eggs in three months. 5. Cup for the best layer, owned by an Indian poultry breeder, presented by Mr. St. Geo. Jackson, Lucknow: Muzaffar Uddin Khan, Lucknow, with White Leghorn laying 52 eggs. 6. Cup for the best layer bred from U.P.P.A. stock, presented by the U.P. Poultry Association: Won by U.P.P.A., cup given to runner-up, Mr. M. Khan, with winner No. 5. 7. Cup for the best layer. White Leghorn, presented by the Rajah of Jehangirabad: Walter Bradbury, England, with White Leghorn laying 616 eggs. 8. Cup for the best Australorp, presented by the Austral Orpington Club, England: Mrs. Grain, with winner of No.2. 9. Cup for the best Australorp, bred from the Australorp Farms, Ltd., presented by the Australorp Farms, Ltd., England: Mrs. Grain, with winner No. 2. 10. Best layer, heavy breed other than Australorp, presented by the U.P.P.A.: Warwick Rogers, winner of No. 3. 11. Best layer that conforms to the Poultry Club standard for its breed characteristics, presented by the U.P.P.A.: Miss Stehelin, Dehra Dun, with Rhode Island Red pullet. 12. Best layer, owned by a member of the I.P.C., presented by the Indian Poultry Club: Mrs. Grain, Ranikhet, winner of Nos. 2, 8, and 9.

'LEICESTER MERCURY" COUNTY LAYING TRIALS.

Report and Summary of Results for the Four Winter Months, Oct. 6th, 1924, to Jan. 24th, 1925.

Although, owing to the lesser number of birds competing, it is somewhat difficult to compare the present competition with the previous one, it is very satisfactory to note that the egg production has again reached a high standard, averaging 57.62 per bird in the 16 weeks, and that it is slightly in excess of the previous year. A considerable improvement is noticeable in the size of the eggs laid, the 1st grade being 3.15 per cent. higher and the 2nd grade 2.67 per cent lower than during the same period of the previous competition. The number of eggs under weight is also less than last year, and but for one pen would have been extremely low.

It is very satisfactory to be able to state that, despite the unfavourable weather experienced during the winter, the health of all the birds has been good and that no deaths have occurred up to date

FIFTH MONTHLY REPORT FOR THE PERIOD—Jan. 26th to Feb. 22nd, 1925.

The fifth period of four weeks in the above competition ended on Feb. 22nd, and Mr. W. Rolling reports that the egg production again shows an advance over the previous four weeks, 1,915 eggs being laid as compared with 1,761, and that there is also an improvement in the size of egg laid (over 90 per cent. being 1st grade). The average for the four weeks is 17.1 eggs per bird, and the average for the 20 weeks is over 74 eggs per bird. During the 20 weeks of the present competition 8,369 eggs have been laid by the 112 birds competing. The best performance for the month was again made by Mr. T. F. Wildman's pen of R.I. Reds, with 130 eggs valued at £1 6s. 6¼d., one bird in this pen laid 26 eggs in 28 days. Mrs. E. Ball's pen of R.I. Reds still leads the competition, whilst in the Light Breed section Mrs. R. Crawford's White Leghorns retain the first position. In the Small Breeders' section Mr. J. T. Kidger's White Wyandottes are still first. The health of the birds continues to be excellent. No deaths or cases of disease have occurred throughout the trials, although the trials are held in a very exposed situation, and the weather conditions very trying, the colds, which are often prevalent among poultry, have been entirely absent.

The position of each pen is given below, with total of eggs laid:—

Section 1.—Division A.—Light Breeds (6 birds).—Mrs. R. Crawford (W.L.), 503; Crawford and Dowell (W.L.), 485; J. and A. Moore (B.L.), 304; Alan Kemp (B.L.), 334.

Section 1.—Division B.—Heavy Breeds (6 birds).—Mrs. E .Ball (R.I.R.), 583; T. F. Wildman (R.I.R.), 584; Miss G. Belgrove (R.I.R.), 516; C. B. Payne (R.I.R.), 524; Lady Dorothy Fraser (R.I.R.), 518; Crawford and Dowell (R.I.R.), 503.

Section 2.—Any Breed (2 birds).—J. T. Kidger (W.W.), 231; Geo. Gilliver (W.W.), 186; Geo .Stevens (An.), 161; Miss D. Walton (W.L.), 133; Mrs. Gilliver (R.I.), 63.

THE SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

LIVERPOOL BRANCH.

The March Monthly Lecture will be held in the Common Hall, 3, Hacken's Hey, Liverpool, on Wednesday, 11th March, 1925, at 7.30 p.m., prompt, when Mr. F. Walsh, of "The Glen Poultry Farm, Hoghton, near Preston, will give a paper on "Chicken Rearing and the Selection of Eggs for Incubation."

There will also be an Egg Show at the Lecture.

FIVE CLASSES.

No. 1. Six White or Light Breed hatching eggs.
No. 2. Six Brown or Tinted Heavy Breed hatching eggs.
No. 3. Four White Commercial eggs.
No. 4. Four Brown Commercial eggs.
No. 5. Four Tinted Commercial eggs.

Substantial prize for each class, and certificates of merit.

Entrance fee 6d. per plate.

All entries to be received by the Hon. Secretary by 7.15 p.m. Judge, Mr. F. Walsh.

R. J. THOMAS, Hon. Sec.

CORRECTION OF ADDRESS.

Mr. W. G. Britten asks us to notify members that his address is Starefield Lodge, RUSHTON, Kettering, and not RUSHDEN, Kettering, as stated in the Register.

APPLICANTS FOR MEMBERSHIP.

Wright, Mrs. W. B , The Manor House, Beesby, Alford, Lincs.
Lenton, J. W., Chauntry Road, Alford, Lincs.
Robinson, H. H. B. Vaughan, Belstead P.F., Belstead, near Ipswich, Suffolk.
Knights, C., 56, Norfolk St., King's Lynn, Norfolk.
Pailby, M., 75, Long St., Atherstone.
Grayson, G T., Gorse Hill Farm, Wellingore Heath, Lincoln.
Pilcher, W. H., The Gows, Invergowrie, Dundee.
Gordon, P. G., Knocknagarm, Curragh Camp, Co. Kildare.
Cavanagh, Miss E. E., Kimmage Grove P.F., Terenure, Dublin.
Carter, Major E .G. W., at Larkfield, Quarry Lane, Headington.
Vaughan, Miss M. E A. Beavan, Glascwn Court, Builth Wells, Breconshire.
Holman, Miss M., Manor House Farm, Burton Overy, Leicester.
Smith, E. C., "Glenhaven," Rockingham Road, Kettering.
Smith, Miss W., Wixenford, Wokingham, Berks.
Ross, W. G., Two Shires Yew, Chinnor Hill, Oxon.
Dibble, Miss K. A. B., Plantation House, Banwell.
Wright, Mrs. M C., Seton West, Tranent, East Lothian.
Hawcroft, W. E., Sunny Bank, Moor Lane, Wilmslow.
Walker, Harold, Marley Brow Farm, Bingley, Yorks.
Walker, Watson M., Marley Brow Farm, Bingley, Yorks.
Gabriel, John E., Kytton, Holcombe Rogus, Devon.
Sefton, R., 93, Walmsley Road, Leigh, Lancs.
McGillewie, Com. D. I., Stoneways ,Newdigate, Surrey.
Walker, Ernest, Spring Grove, Cobham.
Symes, Lawrence, The Bungalow, Ness, nr. Neston, Cheshire
Widdicombe, C. E., Dersingham, King's Lynn, Norfolk.
MacCombe, Mrs. R. H., Ballyarton, Killaloo, Londonderry.
Coleridge, Hon. Mrs. Stephen, The Ford, Chobham, Woking.
Hollick, Alfred, Sunny Side, Kingswell Rd., Ensbury Park, Bournemouth.
Walker, Andrew R., "Glenside," Shields Rd., Motherwell, Scotland.
Horner, Miss M. E , Ashgrove, Sutton in Craven, Yorks.
Waley, Mrs. O., Wavertree, Mount Harry Rd., Sevenoaks.

KEIGHLEY AND DISTRICT BRANCH.

The Keighley and District Branch held their second annu general meeting in the Temperance Hall, Keighley, on March 4t 1925. Mr. Frank Snowden presided over a well-attended meetin In his opening remarks he gave a resume of the work during t past year. It had been a real progressive year. The number members were more than doubled since the last general meetin and the benefits and concessions secured for the members we numerous.

Minutes of the first annual general meeting, held on March 5t 1924, were read, confirmed and signed. Three new members we welcomed into the society. Owing to the illness of the t auditors the accounts had not been audited, and a statement cou not be made. The Treasurer's report went to show that the was a balance of £18 6s. 3d. on the year's transactions.

The Secretary reported that in May the number of fully paid- members was 42, and at the present time there were 118.

During the year the society had become affiliated to t National Poultry Council, and the Yorkshire Federation of Pou try Societies.

A prize draw had been held, with the result that the sum £38 8s. 6d. was realised.

There had been no outings to poultry farms during the yea but the members had attended the sale of existing stock a plant on the farm purchased by the Yorkshire Federation Poultry Societies at Otley on 31st August. Several membe were purchasers. The sum of £50 had been invested in the Yor shire Federation Laying Test, Ltd., from the society's funds November, 1924. The Open Utility Poultry Show, held on 1 November, although a failure financially, was a success in ma other ways. Lectures and Egg Shows had been held during t winter months, also several whist drives, which all helped to au ment the funds of the society.

On December 20th the Yorkshire Federation of Poult Societies honoured the society by a visit, and held their seco annual general meeting in the Co-operative Hall, Keighle Taking everything into consideration, it had been a very succes ful year.

Officials elected were—Honorary President, Mrs. M. E. Cla M.B.E.; President, Mr. Frank Snowden; Vice-President, Mr. Sawyer; Hon. Treasurer, Mr. H. Butterfield; Hon. Secreta Mrs. A. Wilson; Committee, Messrs. H. Reynard, H. Buckle J. Paget, W. Wharton. R. T. Wilson, F. Slee, S. Hartly, Feather, F. Newiss, H. Walker, Ed. Hodgson, J. R. Thomps J. Hey, S. Preston; Auditors, Messrs. W. Wharton and A. Wa bank; Delegates to Yorkshire Federation of P.S. Council Me ings, Mrs. M. E. Clay, Mrs. A. Wilson, and Messrs. F. Snowde H. Walker, and A. Sawyer.

Mrs. Wilson was instructed to speak on resolution on t agenda of the Council meeting of the Yorkshire Federation, to held at Hull on 14th March. It was resolved that nominatio for officials to be elected at the annual general meeting to be ma during the two months previous to such meetings, voting to by ballot. End of financial year to be on August 31st each yea subscriptions to branch to be 2s. 6d.

Mr. A. Sawyers and Mr. H. Reynard were elected as represe tatives to the society on the committee arranging egg prices Keighley and District. It was agreed to hold the second ann open utility poultry show, as usual, on first Saturday in Nove ber. Mr. F Slee moved a vote of thanks to all officials for th services during the past year. The motion was carried una mously. Mr. Snowden then declared the meeting closed.

Mrs. A. WILSON, Hon. Secretary.

AN APPRECIATION.

Lewidden Poultry Farm, St. Ervan, St. Issey.
27th January, 1925.

21, Arthurdon Road, Brockley, S.E.4.

Dear Sir,—You may be interested to know that I have f saken all other poultry journals, and cleave only unto "Egg I share the just appreciation of your other correspondents.

Yours faithfully,

(Signed) R. E. HOOK.

Market Report.

INISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, MARCH 6th, 1925.

GRAIN AND FEEDING STUFFS.—English wheat meets with ıer more inquiry at slightly higher prices, while all imported ats are also in better request and are quoted dearer by ıt 2s. per 496 lbs. English malting barley is not inquired while a very slow business passes for grinding samples at ıt late rates. Imported barleys are generally easier. English continue to meet a dull trade, although some improvement eported at London. Canadian oats are a little cheaper. ze is in good supply, but only a poor inquiry exists and her reductions are shown.

Millers' offals are mostly cheaper on the week, trade, on whole, being dull. Meals are in limited demand, and late s are barely maintained, especially for maize and barley ls. Oil cakes meet an irregular trade and linseeds are er at Bristol, but at Liverpool these are pressed for sale reduction.

ILLERS' OFFALS —Bran (British): Bristol, £9 5s; Hull, ; Liverpool, £8 5s; London, £8 7s. Broad Bran: Hull, £9 12s; lon, £9 15s. Middlings—Fine (Imported): London, £10 2s; se (British): Bristol, £9 5s; Hull, £8 10s; Liverpool, £8 5s; on, £8 2s. Pollards (Imported): Bristol, £8 2s; Hull, £7 17s; pool, £7 7s; London, £8. Rice Bran: Bristol, £10; Liverpool, MEAL.—Barley Meal: Bristol, £13; Hull, £12 13s; London, 5s. Maize Meal: Bristol, £12 15s; Hull, £11 17s; Liverpool, 7s; London, £11 12s. Maize Meal (S. African): Hull, £10 15s; pool, £10 17s. Maize Germ Meal: Bristol, £12; Hull, £10 15s; on, £10 5s. Maize Gluten Feed: Bristol, £12 5s; London, £11. st Bean Meal: Bristol, £9 15s; Hull, £9 10s; Liverpool, £10; on, £9 15s. Bean Meal: Bristol, £14; Hull, £12 18s; London, 0s. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £19 10s; on, £21.

EGGS AND DEAD POULTRY.

ade for eggs is disappointing, and, with very full supplies marketed, prices have fallen considerably. English poultry w becoming short and prices have a firmer tendency, while ted descriptions maintain last week's values.

eek-end Prices—Eggs (per 120): British, 15s 6d, 14s 3d; Irish, , 14s 3d; Danish, 16s 9d, 16s 3d; Dutch, 16s 0d, 15s 0d; Styrian, , 13s 0d; Belgian, 14s 6d, 14s 0d; Italian, 14s 0d, 13s 3d; ian, 9s 6d, 9s 0d; Chinese, 13s 9d, 10s 3d.

ad Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 8d; Irish, 1s 2d; Others, 1s 8d, 1s 5d. Ducks, 1s 9d, 1s 4d. Geese, 1s 0d. Turkeys, 1s 5d, 1s 2d.

EGGS.

r Doz.—Ashford: First, 1s 6d; Second, 1s 4½d. Birmingham: 1s 7¾d; Second, 1s 6½d. Bridgwater: First, 1s 1½d.; Second, . Carlisle: First, 2s 0d; Second, 1s 9d. Chelmsford: First, Second, 1s 4½d. Derby: First, 1s 10d. Doncaster: First, Dorchester: First, 1s 2¼d. Exeter: First, 1s 8d. Hereford: 1s 3d. Ipswich: First, 1s 8d; Second, 1s 6d. King's Lynn: 1s 6d; Second, 1s 3d. Lincoln: First, 1s 9d. Llandilo: 1s 4d; Second, 1s 3d. Mold: First, 1s 4d; Second, 1s 3d. rt (Mon.): First, 1s 8d; Second, 1s 7d. Norwich: First, Oswestry: First, 1s 6d. Penzance: First, 1s 3d; Second, St. Ives (Hunts): First, 1s 3d; Second, 1s 1¾d. Salisbury: 1s 6d; Second, 1s 4d. Shrewsbury: First, 1s 5d; Second, Skipton: First, 2s 3d. Truro: First, 1s 3d York: First, Second, 1s 8d.

FOWLS.

lb.—Birmingham: First, 1s 6d; Second, 10d. Derby: *6s 6d; Second, *3s 0d. Doncaster: First, *6s 0d; Second, Exeter: First, 1s 6d. Hereford: First, 1s 6d. Ipswich: 1s 7d. Lincoln: First, *5s 6d; Second, *4s 0d. Llandilo: s 9d; Second, 1s 5d. Newport (Mon): First, 1s 8d; Second, Shrewsbury: First, 1s 5d; Second, 1s 3d. Truro: First. York: First, *6s 0d; Second, *4s 6d.

DUCKS.

lb.—Doncaster: First, *6s 0d; Second, *5s 0d. Exeter: 1s 6d. Hereford: First, 1s 4d. Ipswich: First, 1s 6d. : First, 1s 9d; Second, 1s 5d.

*Per Head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, March 11th, 1925.

CONTENTS.

EDITORIAL ... 159
LANCS. U.P.S. TEST ... 160
CHESHIRE C.C. TEST ... 160
MODERN POULTRY FEEDING ... 161
WYE COLLEGE DUCK LAYING TEST ... 162
INCUBATION ... 162
BEES ... 163
S.P.B.A. ... 164-172
ANSWERS TO QUERIES ... 166
POST-MORTEMS ... 167
B.W.D. ... 168
CORRESPONDENCE ... 169
INDIAN EGG LAYING TEST ... 171
"LEICESTER MERCURY" COUNTY LAYING TRIAL 171
MARKET REPORT ... 173

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscriptions to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS, per line, extra 9d.
DAY-OLD CHICKS, „ „ 1s.
DAY-OLD CHICKS „ „ 1/6

The number of letters, punctuations and spaces between words should be totalled, when the following table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount. will not be inserted.

Advertisement must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office

FIRST POST FRIDAYS

for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY. AND TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. **BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS,** for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent. and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

EGGS.

FOR SALE.

Eggs for Sitting. R.I.R., Light Sussex, and W. Wyandottes. Best strains. Numerous awards; 7s. 6d. for 15, carriage paid; unfertiles not replaced. Mammoth Bronze and Austrian White Turkey Eggs; 30s. doz.. carriage paid; March and April.—E Upson, M.S.P.B.A., Riddens Farm, Five Oaks, Billingshurst. Tel.: 13 Slinfold.

Why young chicks die

Thousands of chicks die annually because Poultry keepers are unable to feed them regulary every two hours.

The FUL-O-PEP way saves this loss of chicks and time—simply tip the FUL-O-PEP Growing Mash straight from the red-striped bag into the hopper, several days' supply at a time.

The FUL-O-PEP way assures that every particle of required nourishment is given to the chicks so that at no moment of the day are they deprived of quick growth making, heat providing Mash or kept hungry in the cold.

FUL-O-PEP fed chicks only require visiting once a day—think what this means to you! Yet there is better health, better growth and practically no losses.

The FUL-O-PEP way makes chick rearing easier and more profitable.

FUL TRADE -O- MARK PEP

GROWING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE

For complete information on this vital subject, write for the revised edition of the FUL-O-PEP Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

This book has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Made and guaranteed by Quaker Oats Ltd., 11, Finsbury Sq., E.C

EGGS.

FOR SALE.

Prize Pen Barnevelders, White W dottes, White Leghorns, Fawn and W Runner Ducks, Black Runner Ducks. the best laying strains procurable. A sittings can now be booked. Corres dence invited. — A. Hudson, The F Kirkby-Thore-by-Penrith, Cumberland.

White Wyandotte Eggs, 2¼ozs., 6s. doz.; 45s., 100. Cam's Extra Special Pe and II. Mating. Particulars on app tion.—Miss F. Tinkler, late Caunton V age, Newark.

Eggs for Incubating from fine floc Goldens' and Measures' R.I.R.'s; £2 10s. a 100. Other breeds kept: W. L.S., Anconas, and Houdans. Send catalogue.—Gardner, Aldington, Kent.

White Leghorn Eggs; 7s. 6d. per 15, Every bird trap-nested. Also White W dottes and Rhode Island Reds—G Tootall, M.S.P.B.A., Thorncliffe Po Farm, Barrow-in-Furness.

Eggs from splendid laying strains. W Leghorns, White Wyandottes, and R. 6s. dozen; £2, 100.—Mrs. Higginson, wardine, Cockshutt, Ellesmere.

Large Brown Eggs for hatching, ex tion and Utility Barnevelders; 6s. 6d. 6d., 20s. dozen; u.r.—Sydney Hiller. Sta Herts.

H. Denness, Oak Tree Farm, Holme, offers Sittings from guaranteed tr type Buff Rocks (Drew's), Rhode I Reds (Abbey's), White Wyandotte (Ca Light Sussex (Rothschild's), Buff Or tons (Cook's); 7s. 6d. dozen; carriage unfertiles replaced.

Blue Andalusian Eggs, 7s. 6d. per d —Shepheard, Ashburton, Devon.

Barnevelder, Middleman-Brienen sta prize-winning; big brown 250-egg st 10s. 6d., replacements.—Lonnen, St. Dorset.

R.I.R. Eggs by return, Cook's (St. Cray) Class 3 direct; 7s. 6d. fifteen, guaranteed from two-year-old hens. Bayliss, The Pillars, Chipping Norto

Buff Rock Eggs, from selected layers, cockerel direct Miss Harrison 5s. dozen, unfertiles replaced. — Pa Moorstock, Sellindge, Ashford.

HATCHING EGGS,
From reliable High-Class Utility Buff Rocks, Bilsborough, Bland-Ha Bell; W. Wyandottes, Cam's. Snowde 6d. dozen; satisfaction assured. — Cadman, M.S.P.B.A., Sidbury, Bridg

EGGS FOR INCUBATORS.
Rhode Island Reds, Black Leg White Leghorns, from well-bred h stock; 35s., 100. Special Pens extra. Sittings supplied.—Duke's Poultry Rudgwick, Sussex.

WHITE WYANDOTTES
Trap-nested Large eggs.
7s. 6d. DOZEN, 55s., 100.
—Brett, Hangerlea, Bishop's Stortfo

BUFF LA BRESSE.
Eggs, 10s. doz.; splendid new ve good layers and excellent table birds hardy and easy to rear. Satisf guaranteed.—H. Craven, Elstree. He

GREAT REDUCTION I
R.I.R. EGGS.
Pen I.: Male's Dam, 263; Hens, 2 15s. doz. Pen II.: Male's Dam, 245; 240-250; 12s. 6d. doz. Pen III.: Male's 273; Hens, 200—230; 7s. 6d. doz., 50 Pen IV.: Male's Dam, 253; good s Hens; 5s. doz., 35s., 100.—Miss Hasler ton-on-Sea.

E G

Wednesday, March 18th, 1925.

EGGS

THE OFFICIAL ORGAN OF
THE
SCIENTIFIC POULTRY BREEDERS ASSN.

(Founded in 1912 by RANDOLPH MEECH).

gistered at the G.P.O. as a Newspaper.
l. XI. No. 11. Copyright.

Edited by TOM NEWMAN.
Price TWOPENCE.

Twelve Months	Post	Free	12/8
Six Months	,,	,,	6/4
Three Months	,,	,,	3/3

One of the National Trial (1922) Pens.

It won various Certificates and the Welsh Cup with records to 276—one bird failed.
This Pen led throughout the winter.

Bred and Owned by

Mrs. Alec Wilson,

Garth Wyandotte Farm, Garth, Breconshire.

PRIEST & SHAW.

WYANDOTTE SITTINGS CHICKS.

UNDER ROYAL PATRONAGE
I.O.W
ALWAYS WINTER EGGS

LEGHORN SITTINGS CHICKS.

TESTIMONIAL LETTERS.

Ovington. Watton, Norfolk.
29th January. 1925.
Messrs. Priest and Shaw, Sandown, I.W.

Dear Sirs,—The chicks arrived quite safely yesterday. They look very nice and cheerful to-day; hope they will do well.

Yours truly, A. S. BUNKALL.

Ovington. Watton, Norfolk.
25th February. 1925.
Messrs. Priest and Shaw, Sandown, I.W.

Dear Sirs,—I am glad to say the White Wyandotte Chicks I had from you have done finely; have not lost one. They have grown very well.

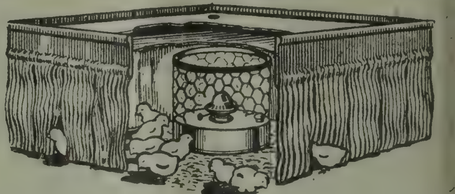
Yours truly, A. S. BUNKALL.

WRITE FOR OUR 1925 MATING LIST.

SANDOWN —— I.O.W.

The Housing Problem Solved!

Let the All-Steel Cosy Hover Rear Your Chicks!



Experienced poultry farmers have told us that the COSY HOVER is all that is necessary for the successful rearing of healthy chicks.

"An agent writing us on Feb. 20th says:—" A lady customer writes as follows: 'I am so delighted with the Cosy Hover, I want another.' "

Construction.—The heat is evenly distributed to the four corners of the Hover by means of a hot-air chamber covering the whole surface of the roof, and is retained at the sides by curtains attached to steel strips. These curtains are in four sections so that one or more sides can be left uncurtained if desired.

Price: 50 Chick Size, 16/6; 100 Chicks, 21/-.

Carriage Paid.
Obtainable from Ironmongers, Corn Stores, etc.
Write for full particulars and Catalogue containing 70 illustrations of labour-saving Poultry Appliances and address of nearest agent.
Bona-fide dealers in Appliances should write us for trade discounts and catalogue.

TRIPLE SSS 'ESS'

SWIFT & SONS,
Makers of "SSS" Poultry Appliances,
Olympia Works, Scarborough

TRIPLE SSS 'ESS'

Furniture and Incubatio

HERE is an illustration of a beautiful hand-carved Jacobean chair—a piece furniture that would enhance the appearance of any room. But it won't hatc eggs!

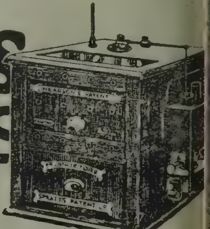
And that's just the trouble you will have with your hatching this season if yo don't decide on the Hearson Incubator to-day.

The Hearson is made for your hatching sheds. It is built up to the highest pitc of perfection with one sole object in view— consistent and efficient service that going to double your rearing profits this season.

You are not buying furniture when you get an incubator. Look for the machi that makes the 100 per cent. hatch a concrete fact — that ensures uniform hea correct moisture, plenty of fresh air—and that will be as good forty years hence it is new to-day. The only machine that fulfils all these conditions is the Hearso

And remember, too, a well-known saying adapted for the poultr man, "A thing of profit is a joy for ever."

Hearson's INCUBATORS



Write to-day for your big FREE copy of the invaluable booklet on incubation—"THE 100 P.C. HATCH," to Sole Proprietors: SPRATT'S PATENT, LTD., 24/5, Fenchurch Street, London, E.C.3.
West End Showrooms: 14, Princes St, Hanover Sq. W.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, MARCH 18th, 1925.

Editorial.

NO NEED TO BE AT THE FOREIGNER'S MERCY."

he above is the sub-title to an article which eared in the "Sunday Pictorial" of Feb. 1st. Shaw Desmond is discussing the question as to ther England can feed herself; in his opinion can. On that point it is not our place to offer opinion; we are merely concerned with that ion of the article which refers to the poultry stry. Here we have the extract relating to production, and Mr. Desmond's opinion :—

"What earthly chance, for example, has the English egg industry when competing with the Danish? I use the word 'industry' advisedly.

The electric-lighted boxes I saw in Denmark told the onlooker how long the egg had been laid, where it had come from, and, I think, its sex.

In the year I inspected the eggs in Denmark, I found they had been sold to the tune of 2¼ million pounds sterling.

Denmark is divided into egg-collecting areas. Each egg co-operator has his own number, which, together with the date of the egg, is stamped on the shell. The eggs are sorted by weight, and they are all collected y a man who goes from village to village, nd are sent to the rail-road for export.

Why should not England be similarly livided? Why should she not standardise her ggs? Why, in the name of all that is reason-ble, should she not beat the Danish egg out f the English market?"

far as this section of his article is con- d, Mr. Desmond merely asks the question, ails to point the remedy—unless he is trying dicate that co-operation and standardisation be the salvation of the industry. However, Mr. Desmond we need not concern ourselves. emarks clearly indicate that his knowledge British poultry industry is not very profound, gh it may make a lasting impression on the of the readers of the "Sunday Pictorial." the average reader of the "Pictorial," and elicious morsel "and **I think the sex.**" One can imagine him saying: "Why in England, we can't even tell the **age** of an egg; in Denmark they can **even tell you its sex, its sex, man!** Oh! **I** don't know what this country is coming to!" If Mr. Desmond had made a few enquiries here he would have known that egg testing by "electrically-lighted boxes" is not unknown, and was possibly practised here before it was known in his beloved Denmark.

In approaching these problems, it is well to remember, in the first place, that we are an importing country, and every egg produced here must be sold here, and further that the poultry industry is a far more highly specialised one here than in any continental country. There are comparatively few egg farms on the continent as we know them here. Most of the eggs are produced on the small holdings or the dairy farms; the average production of the hen is much lower than in this country, the cost of production is much lower, and the cost of marketing, owing to the co-operative methods employed, is also much lower. But we make a very great mistake in believing that the Dane is able to compete with us, and beat us in our own markets, solely because of co-operation. That is invaluable to him, because it enables him to find the best markets, and to market more cheaply, and we must give him the credit that he has studied our markets very carefully, and has won the confidence of the importer and consumer; but we should be wiser if we did not pin our faith entirely on co-operation as a means of promoting the prosperity of the industry. Surely we might direct our energies to the more profitable end of studying costs of production, and count on co-operation as but one means to that end. What, we wonder, is the cost per long hundred of marketing egg co-operatively? What actually does the producer gain? We are not intending to write disparagingly of the work of the co-operative societies. We readily admit the splendid work they have done, and are doing, but we are apt to be too readily impressed with the glamour of figures when they are thrown at us in millions, and we miss other essential points.

We may take it that the big man can look after his own interests—he is not a big man if he cannot—but the large majority of the eggs in this country are not produced by the big men, but by those, who, if they are to make even a partial success of poultry-keeping, must learn to combine, not only to sell, but to buy. We use the word **combine,** as apart from co-operate, advisedly.

The distinction may perhaps be a fine one, but for our purpose it exists. Co-operation, as we understand it, means a society with a paid secretary, a depot, a staff, a motor lorry, all of which mean heavy overhead charges, which the present prices of eggs do not admit ; but there might be effective combination between a few individuals by which the overhead charges might be reduced to the minimum ; there would be no paid secretary, the work would be shared, each doing his part, as part of the ordinary business routine of his farm. In any case our efforts now must be directed to reducing costs, both of production and marketing ; and we firmly believe that this may be more easily effected by the combination of the few, rather than by a wholesale co-operative movement. The co-operative society has this advantage—it can the more easily find the markets ; and here is a difficulty with which the small man has too often to contend, but it is not an insuperable one. It might be possible, if this "group" movement was encouraged and became generally popular, for some sort of central information bureau to be established, whereby the groups could be kept in close and constant touch with the best markets. There would appear to be some reason to believe that the small groups could deal more effectively with the better marketing of eggs, and by that we mean the marketing of better eggs, than the larger co-operative societies can. One gets tired of writing that if we are to meet foreign competition there must be better organisation ; the constant repetition of these platitudes does not help in the least. We do not believe that much good will accrue from very large societies, unless these societies can get into direct touch with the consumer, or at least they should not be an additional pair of hands through which our produce has to pass before it reaches him. We believe that the movement initiated by the S.P.B.A. in its Food Purchase Scheme would be far more successful as applied to marketing than co-operation. The Council were not able to find any method of purchasing food for members on the lines of co-operation, because the overhead charges would have been too heavy, and that, in our view, applies to marketing.

WEST SURREY POULTRY SOCIETY'S WINTER LAYING TEST, 1924-25.

FINAL REPORT—OCTOBER 5th to JANUARY 31st, 1925.

Figures are eggs and points respectively:—

Class I.—Section A.—Heavy Breeds.—H. J. Willis (Pen II.) (W.W.), 165, 149; H. W. Homewood (R.I.R.), 167, 139; H. W. Homewood (L.S.), 111, 111; H. Rowntree (Pen I.) (W.W.), 111, 111; H. Rowntree (Pen II.) (W.W.), 109, 108; Burrows Lea P.F. (W.W.), 150, 107.

Class I.—Section B.—Light Breeds.—W. E. Saul (W.L.), 139, 126; Burrows Lea P.F. (W.L.), 149, 126; Hudson Bros. (Pen I.), (W.L.), 123, 123; Mrs. C. R. Harding (Pen I.) (W.L.), 125, 122; H. Rowntree (B.L.), 103, 100; H. G. Hood & Sons (B.L.), 98, 89.

Class II.—Section C.—Heavy Breeds.—Mrs. Wiltshire (W.W.), 54, 26; E. Thompson (R.I.R.), 34, 21; W. E. Saul (W.W.), 21, 20; H. Rowntree (W.W.), 12, 12; Hudson Bros. (W.W.), 8, 8.

Class II.—Section D.—Light Breeds.—Hudson Bros. (W.L.), 35, 35; H. G. Hood & Sons (B.L.), 33, 33; W. E. Saul (W.L.), 30, 30; H. G. Hood & Sons (W.L.), 21, 21; E. Thompson (W.L.), 13, 12; Mrs. Wiltshire (W.L.), 3, 1.

Modern Poultry Feeding

By **TOM NEWMAN.**

LEG-WEAKNESS.

It is perhaps a mistake to bring this under the ject of "Feeding," but the letter below from Ellis is very interesting, and as feeding is mentic we can deal with a subject which is always of inte and always will be until we can find a solution. cannot agree with Mrs. Ellis, that what has been with regard to foul air, wooden floors, faulty fee etc., is all "piffle." Although I have so often expr the opinion that the trouble rarely arises from die causes, the mistake we have made, as I have often is in attributing it to a specific cause. She will pa my saying that she has produced no evidence to her contention, that leg-weakness is the symptom disease. I believe it to be but a symptom, and disease. I have known cases occur with hen-hat chicks which have been taken from the hens as soo hatched and placed in brooders, but I have never k it to occur with chicks hatched and reared under except in isolated cases, where obviously the fe has been at fault. I have known outbreaks to when the atmosphere under the brooder has been e tionally dry, and in such cases it has been check the application of moisture; it is far more prev when the chicks cannot get into contact with M Earth. I believe humidity is a great factor in cou acting it.

Here are three points for Mrs. Ellis to conside has been checked by the addition of cod liver the ration, by allowing the chicks to run on the earth, by soaking the legs in salt and water. M ask her if she has made a post-mortem examinati any of her chicks, and, if so, whether she has foun kidneys affected or not? I think we have been outspoken and honest on the subject. We sha entirely agree with her and Dr. Tawse; scientif vestigation is very necessary, and we must take to see it investigated, but my own impression is it is primarily a brooder trouble. The cramp whi get from wooden floors is a totally different Floor draughts would not cause it, but I believe be due to debility in a large number of cases; an far as the diet is concerned, the trouble there from the feeding being too stimulating. Someti have thought that in the case of chicks which feathered very quickly the trouble may be trac lack of vigour from this cause.

Here is one experience which may be of int On a certain farm chicks were reared under oil in one large brooder house, 100 chicks to each se the floor was of earth. The losses from leg-wea were very considerable in one season, as, owing long-prevailing east winds, the chicks spent m their time in the house. The following seaso brooder house was used again, but, in additi number of 6 x 6 houses were built, and 80 ced in these, under a home-made brooder. The mash pers were placed outside, and the chicks were well tected from the cold winds by corrugated iron sheets. the brooder house the number of cases of leg-weak- s continued as high as ever; in the 6 x 6 houses d a case occurred, although the chicks were from same flock, and the feeding the same in every ect. I do not agree with Mrs. Ellis that poultry ners dare not make their losses from this cause lic, because very few of them believe it is due to ase, and fewer still that it is contagious or infec- s; but let us have scientific investigation by all ns, for it matters very little who is wrong if we out what is right. May I refer Mrs. Ellis to or Saunders' reply to G.B. under Post-Mortems his week's issue:—

Woodington House, Romsey, Hants.
4th March, 1925.

Dear Sir,—I am most interested in the letter of Dr. Bell Tawse on "Leg-Weakness" which appears in this day's issue of "Eggs." I am only a new-comer in the poultry field—so new I may almost be considered "green"—but I unreservedly endorse his opinion. Before taking up poultry my husband and I visited and examined a great many large, prosperous, and well-known poultry farms, and before embarking on the chicken-rearing season, we very carefully and thoughtfully read most of the best standard books on the subject. We placed ourselves under the guidance and tuition of a thorough and well-to-do breeder, and carried out his advice in regard to feeding and rearing of chickens, etc. Our brooders and hovers are new and up-to-date; the most scrupulous care is bserved in connection with hours of feeding, cleanliness, etc.

We purchased 200 eggs for an incubator from a oultry farmer whom we have every reason to elieve to be as conscientious as he is successful. From these we got 129 chicks. These got along airly well for a while, the exception being some 20 dd weaklings that were crushed to death by their ore vigorous brethren. When they had been in he brooder about 17 days leg-weakness set in, and as been steadily and daily decreasing their num- ers, in spite of every care. On the other hand, f some 71 eggs of our own that we set under hens, *t exactly the same time*, we have hatched out 41 turdy, lusty chicks; 10 eggs being addled, and ve broken.

I am a nursing sister, with over 16 years' prac- ical experience of disease and treatment, and I m convinced from observation that leg-weakness the symptom of a disease. This disease I elieve to be contagious; whether it is infectious cannot presume to say. I think, like Dr. Tawse, view of the havoc and serious losses, leg-weak- ess causes, that it demands scientific investiga- on.

The reasons usually given by poultry farmers as the cause of leg-weakness (foul air, wood floors, ulty feeding, floor draughts, want of vitamines, e., etc.) I believe to be pure piffle—bona-fide, rhaps, but piffle for all that. For obvious reasons poultry farmers dare not make their losses from this cause public. Until careful microscopic and bacteriological examination is made, leg-weakness must remain a mystery and an annual menace, so why not be honest and outspoken on the subject?

What I would like to know is—Does this leg-weakness attack only incubator-hatched chickens?—Yours faithfully,

MARGARET W. ELLIS.

HARPER-ADAMS' AGRICULTURAL COLLEGE, NEWPORT, SALOP, POULTRY LAYING TRIALS, 1924/1925.

Report for the Fourth Period.

The fourth month ended on February 20th, and was marked by a pronounced increase in egg production. The individual average for the period was a fraction over 16 eggs per bird, compared with 14 in the previous month. In the Championship and Wyandotte Sections 17 eggs per bird were recorded. The Light Breed Section of the Championship in particular showed a notable increase of three eggs per bird, and for the first time were in advance of the Heavy Breeds on the month's results, although the Heavy Breeds still hold a substantial lead in the aggregate.

The health of the birds during a month of damp conditions has continued satisfactory.

There have been only two changes in the first positions. Miss Mill's Rocks taking the lead in the Heavy Breed Section, and Mr. Street-Porter's Wyandotte gaining first place in the Single Bird Trials for that breed. Otherwise there have been only relatively minor changes in the leading positions, which at the end of the fourth period are as follows:—

SUMMARY OF THE LEADING PENS.

Championship Trials.

Section 1. Light Breeds.—A. White (B.L.), Malpas, Cheshire, 656 eggs; Frank Snowden (W.L.), Keighley, Yorks, 603; Warwick Rogers (W.L.), Market Drayton, 611; Miss N. H. Bell (W.L.), Ightham, Kent, 641; H Sutton and Sons (W.L.), Little Hoole, near Preston, 610

Section 2. Heavy Breeds.—W. Lister (L.S.), Northiam, East Sussex, 776; E. Watson (W.W.), Colne, Lancs., 745; G. B. Metcalfe (W.W.), Lechlade, Glos., 731; F. H. Collins (W.W.), Bewdley, Worcs., 696; Miss M. Fowler (W.W.), Feniscowles, Blackburn, 789.

SMALL FLOCK TRIALS.

Section 1. White Leghorns.—W. McMahon, Newton Mearns, Renfrewshire, 478; J. and W. Purdie. Lanark, 449; H. Smith, Low Shiregreen, Sheffield, 450; F. A. Welch, Cheltenham, 422; G. Keith Simmons, Honiton. Devon, 391.

Section 2. White Wyandottes.—D. W. Gunston, Bramdean, Hants, 531; Messrs. Allen Bros., Harrogate, 458; Frank Snowden, Keighley, Yorks, 453; G. Keith Simmons, Honiton, Devon, 440; Mrs. Alec Wilson, Garth, Breconshire. 418.

Section 3. Rhode Island Reds.—F. and A. H. Sanders, Lutterworth, Rugby, 441; Mrs. Jellis, Rugby, 407; Dashwood Farms, Ltd., Deddington, Oxon, 397; R. Green, Preston, 403; F. J. Marston, Biddenden, Kent, 392.

Section 4. Sussex.—F. Rossall Sandford, Shrewsbury, 402; A. Hughes, Malpas, Cheshire, 409; W. Bradbury, Bury, Lancs., 402; J. Taylor Lester, Newport, Salop, 389; A. Robinson, Bawtry, Yorks, 405.

Section 5. Black Leghorns.—W. A. Lansley, Whitchurch, Salop, 383; Wilson Beattie, Rotheresthorpe, Northants, 348; Lady Anderson, Sharnbrook, Beds., 338; C. L. and J. A. Thomson, Holywell, 335; J. H. Hodkinson, St. Ives, Hunts, 316.

Section 6. Any Other Light Breed.—Storer Bros. (An.), Didsbury, Manchester, 354; The Co-oper. W. Soc. (An.), Whalley, Lancs., 362; H. Lyndon Lemon (La Br.), Devizes, 326; Stanley Street-Porter (An.), Ely, Cambs., 329; W. Hamnett (An.), Blackpool, 313 .

Section 7. Any Other Heavy Breed.—Miss P. Mills (Rks.), Bishop's Castle, Shropshire, 440; F. R. Welch (Rks.), Bewdley, Worcs., 426 Miss M. Fowler (B.Orp.), Feniscowles, Blackburn, 427; O. C. Brown (Rks.), Scunthorpe, Lincs., 413; P. E. White (Rks.), Market Drayton, 359.

SINGLE BIRD TRIALS.

Section 1. White Leghorns.—W. Hamnett, Blackpool, 87; N. S. Robinson, Spilsby, Lincs., 82; W. M. Golden, Leire, Rugby, 83; E. Leslie Pattison, Longton, Staffs., 82; J. Potter, Worsley Mesnes, Wigan, 83.

Section 2. White Wyandottes.—S. Street-Porter, Ely, Cambs., 92; Mrs. Alec Wilson, Garth, Breconshire, 87; E. Watson, Colne, Lancs., 86; S. and T. Greenall, Grantham, 83; A. Hughes, Malpas, Cheshire, 82.

Section 3. Any Other Light Breed.—S. Street-Porter (B.L.), Ely, Cambs., 71; W. Hamnett (An.), Blackpool, 78; A. White (B.L.), Malpas, Cheshire, 68; R. A. and A. H. Johnson (B.L.), Chalford, Glos., 63; Capt. C. W. Shepard (B.L.), Malpas, Cheshire, 42.

Section 4. Any Other Heavy Breed.—W. M. Golden (L.S.), Leire, Rugby, 81; O. C. Brown (B.R.), Scunthorpe, Lincs., 81; E. Leslie Pattison (R.I.R.), Longton, Staffs., 77; T. Barron (R.I.R.), Catforth, Preston, 77; A. White (L.S.), Malpas, Cheshire, 73.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

PRESERVING EGGS.

The slump in the price of eggs has turned many people's thoughts to preserving, and enquiries are coming in by every post as to the best method of so doing. There are, of course, a number of proprietary things advertised, and these are usually very good, but I have enquiries as to lime water, and I publish again the method employed at the Experimental Farm at Ottawa. It is hardly necessary to draw attention to the precautions that ought to be taken, but I might say that it is just as necessary to sell at the right time as it is to preserve when eggs are cheapest, and that many have lost badly during the past season by holding eggs longer than they should have done. The outlay for a preserving plant is not very heavy, and there seems no good reason why it could not be done on every farm.

SUPERIORITY OF LIME WATER.

Experiments in egg preservation were begun at the Experimental Farm, Ottawa, in 1898, and have been continued every season since that date. In the course of these experiments trials have been made with more than twenty-five different fluids and preparations that have been proposed or sold as egg preservatives. The work of these fifteen years has shown the superiority of lime-water over all other preservatives which we have tested. Closely following lime-water is the so-called "Water-glass," or Sodium silicate. Both, according to our results, have proved effective preservatives, but it may be remarked that it is useless to expect that either can entirely arrest that "stale" flavour commonly found in all but strictly fresh laid eggs.

THE PREPARATION OF LIME-WATER.

The solubility of lime at ordinary temperatures is one part in 700 parts of water. Such a solution would be termed saturated lime-water. Translated into pound and gallons, this means one pound of lime is sufficient to saturate 70 gallons of water. However, owing to impurities in commercial lime, it is well to use more than is called for in this statement. It may not, however, be necessary, if good, freshly-burnt quicklime can be obtained, to employ as much as was at first recommended, namely, two to three pounds to five gallons of water. With such lime as is here referred to one could rest assured that one pound to five gallons (50 pounds) would be ample, and that the resulting lime-water would be thoroughly saturated. The method of preparation is simply to slake the lime with a small quantity of water, and then stir the milk of lime so formed into five gallons of water. After the mixture has been kept well stirred for a few hours it is allowed to settle. The supernatant liquid, which is now "saturated" lime-water, is drawn off, and poured over the eggs, previously placed in a crock or wate tight barrel.

As exposure to the air tends to precipitate the lim (as carbonate), and thus to weaken the solution, tl vessel containing the eggs should be kept covered. Tl air may be excluded by a covering of sweet oil, or l sacking upon which a paste of lime is spread. If, aft a time, there is any noticeable precipitation of tl lime, the lime-water should be drawn or siphoned and replaced with a further quantity newly prepared

GENERAL PRECAUTIONS NECESSARY TO TAKE.

It is essential that attention should be paid to tl following points:—

1. That perfectly fresh eggs only be used.
2. That the egg should throughout the whole peri of preservation be completely immersed.

Although not necessary to the preservation of tl eggs in a sound condition a temperature of 40 degre Fahr. to 45 degrees Fahr. will no doubt materia assist towards retaining good flavour, or rather arresting that "stale" flavour so often characteris of packed eggs.

Respecting the addition of salt, it must be stat that our experiments—conducted now throughout teen seasons—do not show any benefit to be deriv therefrom; indeed, salt frequently imparts a lim flavour to the egg, probably by inducing an interchar of the fluids within and without the egg. Our adv is, do not add any salt to the lime-water.

EGGS BY WEIGHT.

I have received a letter this week, in which writer urges that the S.P.B.A. should use its influe to secure the sale of eggs by weight. The idea, course, is not a new one. We have had discussi on it before, but have we really given it the conside tion it deserves? I may be wrong, but I think t the possibility of the passing of the Bill which ma the marking of all foreign produce compulsory, give new importance to this question. I must repeat ag that every egg produced in this country must be here, and there seems to me to be no possible cha that we shall be able to enforce the grading of ho produced eggs, although I hope some day there wil legislation which will prevent the sale of dirty o Our ungraded eggs will not compare favourably as as the shop window is concerned, with the foreign graded, so that the latter may receive a valu advertisement at out expense. If eggs were sold weight we should be on equal terms. There is no reason why apples, potatoes, and other things sh be sold by weight and eggs by numbers. Please le have your views on the matter, and see if you do agree that the question has assumed greater im ance, and should be carefully considered.

IN DORSET.

Our late President, Mr. J. G. Kitson, is a D man, and inordinately proud of the fact. I don't know why. It is quite a nice county; certainly parts of it are almost as beautiful as Sussex, and ight feel pleased at being a native, but proud!!! I tured at Wimborne and Sturminster Marshall to embers of the Wessex Poultry-keepers' Association, iich is doing splendid work in the district. There is a good attendance at both places, and the dience at each was very keen. On the Wednesday had a short time with Major and Mrs. Eden, who ll me they have so far had an excellent hatching and aring season. On the Thursday I went to Mr. arding's. Here I saw poultry kept under conditions which they can be made profitable. Mr. Harding s a large general farm, and the conditions under iich the birds are kept approach the ideal. You ust not understand me to mean that it is an elaborate ant—far from it, in fact it is the very reverse, and forced me to the conclusion that the majority of the ants in this country are far too elaborate, and the tablishment expenses altogether too high. The plant Witchampton is eminently useful and practical; the ck, all Rhode Island Reds, were in the pink of condion, and there was a very fine lot of healthy and gorous early chicks. As a farmer, Mr. Harding finds e value of poultry manure to be very great, so that profits from his birds in every way.

In the afternoon I went to Miss Colcutt's m, at Wimborne. As my readers are aware, ss Colcutt was Dr. Baldwin's partner till e unhappy accident, which cost him his life. She ared with him the distinction of bringing the stock its present high state of perfection, and now she has ken over the entire plant. I would not say that the nt at Springfield is too elaborate, but it is certainly model one, and a new brooder house has just been cted which many poultry-keepers would like to have. hat impressed me about the stock, as it ever has ne, was the fact that in spite of the wonderful egg ords, size of bird is fully maintained, while the size egg is all that can be desired. One White Leghorn approaching the wonderful record of No. 103, which d over 1,000 eggs in five years—her final record I get. There is no farm in the country where the ligree records are more carefully kept than at Springd. Miss Colcutt has years of experience in pedigree eding. She takes intense (I think in this case I y justifiably use the word) interest in her work, and ows every bird on the farm. I would have liked to ve spent more time there, but could not manage it. om there I went to Mrs. Parkes, and saw the Cuckoo ghorns. These are kept under conditions which uld ensure the survival of the fittest, and the past ter must have tried them pretty hard. No greater oute could be paid to the breed, for they looked in endid condition, and have been laying well all the ter. They are certainly a smart handsome breed. e thing particularly interested me. Mrs. Parkes is erested in sex-linkage, and there were some Black ghorn pullets, bred from the Cuckoos. I noticed at very good yellow legs these pullets had, far better n one sees in the average flock of Black Leghorns. course, this is easily explainable. In addition to ckoos, Mrs. Parkes has a nice flock of White Bresse, l also breeds Buff Wyandottes. There are some very n poultry-keepers in Dorset.

FOOD PURCHASE SYSTEM.

S. Tomkins, Nately Hill, Hook, Hampshire.
G. Edwards, Berrylands Poultry Farm, Surbiton.
H. I. Hallett, Domica, Tomswood Hill, Woodford Bridge, Essex.
A. Aubrey, The Mount, Hythe, Southampton.
J. Hope Allen, Cannon Hall, Pitsmoor, Sheffield.
M. Cundy (Mrs.), Marula Farm, Plumpton, Sussex.
H. Charlton, Brownshill Court, Stroud, Glos.
T. Rew, Venn, Cullompton.
L. Richardson, Wayside Ped. P. Breeding Farm, Bushey Heath, Herts.
Capt. E. Walmsley, "Auriol," Cromer Road, Upper Kelling, Holt, Norfolk.
A. J. Voyle, Roseville, Lamphey, Pembrokeshire.
Major G .W. Sutton, Weybourne Court Hotel, Weybourne, Holt, Norfolk.

The above members of the S.P.B.A. have intimated that they are willing to form groups to take advantage of the Food Purchase Scheme. Would members in their district communicate with them?

LEIGH AND DISTRICT POULTRY SOCIETY.

A general meeting of the Leigh and District Poultry Society was held at the White Horse Hotel, on Tuesday, 3rd March.

Mr. W. T. Hurst presided over an excellent attendance of members.

Mr. A. Morris, of Hindsford, gave an instructive demonstration on "Washing and Preparing a Bird for Show." Although he had to work under difficulties—the conditions for the demonstration not being ideal—he showed in a very practical manner the correct method of accomplishing the washing of the bird. His method of handling the bird during the process of washing was taken particluar notice of by the members, who should, if they follow the instructions given by Mr. Morris, have no difficulty in washing their white fowls for show.

Our shows also would benefit by more entries, as no doubt the washing of a bird deters many from entering.

A hearty vote of thanks for the demonstration was given by Mr. J. E. Boardman, seconded by Mr. A. Glover, and carried unanimously.

We are holding an Egg Show and Smoking Concert on 18th March, at our Headquarters, the White Horse Hotel, and hope that members will all try to show at least one plate, and so make the show a success.

THOS. BAGSHAW, Secretary.

Major E. Gaved Stocker, of Grampound Road, Cornwall, tells me that he has been reluctantly compelled to part with his stock, owing to a complete breakdown in health, and the doctors have advised him that a complete rest and quietude is necessary.

I am sure our readers and members will hear this with regret, and will all join with me in wishing Major Stocker complete restoration to health.

Utility Duck Club Notes

By **HUGH B. CARRINGTON.**

March, 1925.

It is to be feared that March is already well advanced before these notes have even been thought of, but anyone who keeps ducks and poultry will understand that to discover sufficient time in which to write notes is an exceedingly difficult if not an impossible feat during this month.

However, as some interesting experiences came my way in February, the time has been found somehow. About the middle of last month I was inveigled into broadcasting a talk on Ducks from the Bournemouth Station, and while it was quite an amusing experience, one could not avoid feeling that a mere quarter of an hour's talk was utterly inadequate to do justice to the subject. The main excitement of the evening was the return home, when my car and I took to the water with a vengeance on an unknown and incidentally wrong road. Not being ducks, it looked like a case ot spending the night in a more or less water-logged condition. However, Dame Fortune was kind, and we extracted ourselves after considerable difficulty.

The following day saw us still further west, where a very kind invitation had been extended to me to visit a member's farm, and talk ducks to a number of actual and prospective duck-keepers. The farm is situated on the bank of a river, and I particularly wish to mention it because there may be many other people with similar land who would like to know how such a place may best be laid out.

For anything but ducks such land would certainly during a fair proportion of the year be quite valueless. My hostess seemed to have made splendid use of the opportunity; the land was practically flat to some distance from the river bank, but then sloped gradually till at about 50 yards' distance it was several feet above water level, and, therefore, secure from all risk of flooding. The pens were entered from the top end, and approximately on same line as that at which the trap-nest and other shelters were placed, wire netting was, of course, used to divide the pens which ran down to within a few yards of the river bank, thus leaving a broad passage way running the full length of all the pens. At the bottom end of each of these was a low gate, so that at any time it was possible to let one or more flocks of birds out on free range. The object of the broad passage way on the bank being that the ducks could land whenever they wanted, and then march along to their own front door. A small flock was out when we arrived, and, being feeding time, though some distance from their own entrance, were quickly clamouring at it to be let in. Such is the nature of ducks that once they are used to the home which has been allotted to them they will always be anxious to return to it. Therefore, a duck can be pretty well relied upon to sort itself out without making a muddle of things. The whole arrangement of the pens was so nicely laid out that one immediately felt that there must be large number of people similarly situated throughout the country who could, with great advantage, make use of otherwise worthless ground in this way to their great profit.

Shortly after the inspection of pens followed t best part of a two hours' talk on ducks. It was a gr pleasure to meet keen duck-keepers in this way, a it is clear that this district is fully alive to the pos bilities of duck-keeping. Incidentally the subject marketing duck eggs was brought up, and I am gl to be able to announce that at a Council Meeting h on March 4th definite steps were decided upon starting the Duck Egg Campaign.

It is not possible here to go into details, but provid that sufficient financial support is given to the sche by members it may unhesitatingly be said that t campaign will be of real and lasting benefit to all du keepers throughout this country.

Briefly the idea is to popularise the Duck Egg showing the public generally what a good and valua food it is, and more than that, to help it to beco a recognised fact that the Duck Egg is real value money. Our friends on the other side of the Twe have the reputation of being hard-headed busin people, who like to get good value for their money. the reports I have received from all over the coun regarding the prices which have been received for Du Eggs, Scotland stands easily first in its willingness pay a good price for a good article. May I be p mitted to congratulate them on being so much ahe of some of us southerners in this respect.

Perhaps down here we are a bit slow in the upta but a realisation of the value of the duck egg is so vi to the industry that a tardy recognition cannot be fa with equanimity. For this reason, apart from the s which the Council has already voted for the purpo the maximum sum the finances of the club permit further amount of at least £150 is needed and need quickly. A personal and individual appeal will be se to each member of the club, but anyone who likes anticipate matters by sending a subscription to me once will greatly strengthen the hands of the Cou in the effort which is being made. Bis dat qui cito d

In conclusion, let me give what is more or less quotation from the circular which is being sent out

If the campaign is a success, and this depe entirely on the amount of cash there is available pushing it, duck egg's producers may easily get a per dozen, perhaps more, in excess of what they wo normally have obtained for their eggs. Most of are fond of a bet now and then, but few of us ha ever been on a 20-1 chance, which is a certain Such a chance has come at last, a 5s. subscription the campaign may easily bring in the subscriber increase of £5 on his or her turnover for the year, a subscription may likewise make an extra £100.

Surely there will be enough people who are anxi to win this 20-1 chance, and, therefore, willing to ma it a certainty by sending along their subscriptions, getting that £150 or more, if possible, subscribed double quick time. It is a plain business propositi a matter of £ s. d. He who risks nothing gets nothi

There are plenty of other people not as yet direc interested in duck-keeping, whom the success of t campaign will benefit. Should these notes meet th eyes I hope they will give the matter their serious c sideration.

Reports will be issued in the Press from time to ti of the steps which are being taken and the progr which is being made.

Answers to Queries.

By the EDITOR.

DUCKS.

Seymour Shaw, Warcop Vicarage, Westmoreland, will nswer all queries relating to Ducks. In cases of extreme rgency answer would be direct, otherwise they will appear these columns.

POST-MORTEMS.

DIES " for post-mortem examination should be sent to a)or C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, est Worthing.

es should be packed and sent by post immediately after eath, marked for immediate delivery. The fee is 5s. for a eply by post. The name and address of the sender should e distinctly marked on the package. Advice of dispatch and e should be sent under separate cover to Major Saunders.

ers are particularly desired to observe the above rules when nding birds for post-mortem examination and also as to riting their name and address distinctly on the package.

REPLIES BY POST.

ies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per tter, these are answered by the Editor, and relate to very phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post y the Editor by virtue of their membership (NOT from ajor Saunders).

questions should be addressed to the Editor. Major Saunders oes not reply to questions either by post or through these olumns, except in relation to Post-Mortem Examinations.

Broadway" (Worcs.) asks me if I can give any idea, through these columns, as to the its of corrugated iron versus wood for build- poultry houses. Corrugated iron houses too ily respond to changes in the weather for them be wholly successful as poultry houses. They too hot in summer and too cold in winter. s difficulty might be, to a great extent, over- ne provided they were lined on the inside with ching. In some cases I have seen them lined h cheap felt, and this, too, has been success- In some respects they are preferable to wood. roadway" then wishes to know what capital land would be necessary for an egg farm ely to produce £4 per week. I am afraid this question which I cannot answer. As regards land, I do not think he should attempt it under acres, and personally I would not care to try h an undertaking with less than £1,000, pro- ed, of course, I had no other source of income.

Squiresgate" (Staining). I am compelled to wer through these columns, because he is not nember of the S.P.B.A., and the rules of the iety do not permit replies to be sent by post ept to members, unless a fee of 2s. 6d. is paid. query is as follows :—He has an incubator of -egg capacity, which he warmed up to 103 rees, when the eggs were ready. On the first of the month for starting the incubator he led the machine before putting in the eggs about 90 degrees, put in the eggs at 4 o'clock the first day of the month. The machine was y running steady at 103 degrees at 10 o'clock the second day—what date of the month would e for the 19th day for closing up the machine? If "Squiresgate" put the eggs in on the first day of the month, in spite of the fact that they did not arrive at 103 degrees until 10 o'clock on the 2nd day of the month, the 19th day would be the 19th day of the month for closing up the machine.

"Grateful" (Bowers) refers to my dry mash formula :—2 lb. bran, one clover, four midds., one S.G.O., one maize gluten and one fish meal. He is unable to obtain gluten or pea meal, and would like to know if it is advisable to use the same quantity of bean meal, or is there a better substitute? I would suggest to "Grateful" that it would be better to reduce the bran to 1 lb. and in place of gluten feed use maize meal. As to the quantity of grain per bird, which he wants to know, from October to February, I should give as much as the birds would consume in about twenty minutes as the last feed ; from March to September give a good two ounces each. I must impress upon him that quantity should be regulated by the birds' condition. However, a heavy feed of grain during the short winter months is absolutely necessary as the last feed.

POST-MORTEMS.

R. D. Pneumonia was the cause, and I suspect the close confinement and lack of fresh air to be contributory causes by producing a debilitated condition and lowering their resistance. Sunlight, fresh air, and exercise are essentials to healthy growth, and free ventilation, short of draughts, is especially necessary, where, owing to the inclemency of the weather, the birds have to be kept in. A stale and stagnant atmosphere is conducive both to leg weakness and to lung affections. I should advise regulating the ventilation, and the supply of plenty of green food and the admixture of cod liver oil in the mash, as the latter undoubtedly is an effectual remedy in lung troubles.

B. and P. The report on the first live bird has been delayed because I thought it better to keep her under observation and try the effect of treatment. As far as general health was concerned she was quite normal, but gradually went totally blind. The post-mortem showed her to be in good condition and just about to lay. The eyes were in a glaucomatous condition, i.e., hardened, and with increased inter-ocular pressure. This I can only think could have been brought about by swedes, especially as she was one of many to suffer from the same eye condition. The other two, not blind, but collapsy, were affected with a muco-enteritis throughout the entire length of the digestive canal, the mucous membrane on microscopical examination showing this to be caused by a mold, which I have been unable to identify at present. The filaments of the mold and spores had worked their way in between the cells, and caused an inflammation very similar to that found in Aspergillosis. Whether this was contracted from the swedes I could not say, but any musty litter or foodstuff might be responsible. The other organs of these two birds were quite normal, and the bowel condition was sufficient in any case to account for the symptoms noted. As copper sulphate has a decided effect on fungi in general, I should advise the trial of one dram to every gallon of the drinking water, in the hopes that some that have not gone so far may survive. I suppose the extra call upon the system incident on laying, in addition to the enteritis, precipitated the collapse, but on the other hand it may only be coincidence. As a matter of precaution a sample of blood was taken, and a broth culture was inoculated with it, with the idea of determining the presence or absence of a general infection from some form of bacteria. The post-mortem on the fourth bird showed exactly the same lesions in the bowels, but not quite to the same extent. The other organs were normal.

C. J. N. The only lesions found at the post-mortem examination of the chicks were those of pneumonia, which, of course, would produce symptoms of leg weakness. I should be inclined to think that the heating apparatus is giving off fumes, or else that the supply of oxygen is insufficient, and that the chicks are rebreathing foul and vitiated air. The citrate of iron and quinine, forty grains to the gallon of drinking water, seems to have a good effect in fortifying birds against these conditions, and cod liver oil in the mash is invaluable in lung troubles. Should the losses still continue, I should strongly advise you to have a bacteriological examination made, as there is always a possibility of the pneumonia being only a symptom of some far more infectious disease.

F. L. T. The post-mortem examination of the chicks showed them to be affected with Aspergillosis of the lungs and pneumonia. The disease is infectious and spread by the spores, which are found in musty litter or foodstuffs. The fungus that produces the spores grows in damp straw, decaying wood, and in damp situations generally. The birds should be isolated, and all musty litter or food destroyed. The premises should then be carefully disinfected, and likewise the entire equipment. Birds that are already affected usually die, but a certain measure of protection may be given to others by giving them iron and quinine in their drinking water. The proportions are forty grains to each gallon of water, and they should be given access to none other.

N. K. B. The post-mortem examination of the chicks showed them to be affected with pneumonia. On general principles it is always wise to regard this disease as infectious and to take all precautions to prevent spread by isolation of the affected flock and the disinfection of premises equipment. Pneumonia is sometimes only phase of some other infectious trouble, the les of which may not be evident in every examined post-mortem, and which can only determined by a bacteriological examination. predisposing causes of pneumonia pure and si are foul air in the brooder, noxious fumes f the heating apparatus, and variations of perature producing chilling. Any defects such these must be corrected, or the losses will tinue, medicinal treatment being futile if the ca persist. The treatment consists in dissol forty grains of the citrate of iron and quinin every gallon of their drinking water, and mi cod liver oil in the mash.

W. I. H. The post-mortem examination of chicks showed that they were the subject B.W.D. Your query as to infectivity of germs in the ground is a difficult one to ans as so much depends on circumstances ; if exp to sunlight their existence is quite short, they may persist for a considerable time in damp situations. I do not think I should fumigating the food, as formalin has a decid prejudicial effect on the digestion if given long periods.

W. B. The post-mortem examination of chick showed the cause to be digestive disor produced by the infestation of round worms, Heterakis Inflexa. These were quite numerou the intestines, and had produced considerable tation, quite enough to account for the fits. very slight error in feeding would be accentu by the presence of these parasites, as the dige organs would be more sensitive, and digestion paired. I am glad to say a microscopical exam tion of the caecal contents proved negative coccidia, but the worm eggs in the faeces very numerous. The treatment of such s chicks is rather a difficult matter, as doses be small, and they are not easy to give. ever, oil of chenopodium, ½ drop in ten drop castor oil per head, for two doses ten days a should safely rid them of the parasites. The pings which contain the eggs should be bur and the water and food protected from tamination by the droppings.

G. B. Pneumonia and rickets was the c and also of the leg weakness. While keepi perfectly open mind as regards leg weakness a separate affection, I have never yet, in the ma of some thousands of post-mortems on cases w this trouble has been mentioned, failed to fi perfectly satisfactory pathological explana It not only occurs in young chicks, but als adults that are suffering from diseases of a ticaemic nature, or from acute inflammation the internal organs. Apart from rickets, in the combination of debility and the deficie the bones and articulations quite explain the bility or difficulty in standing or progression, s, in my opnion, the dased condition, produced n the absorption of disease poisons, that partly general weakness and partly by the inability maintain the balance—or, in other words, the xication—that produces the condition known as weakness. If this is so, the writers that have m time to time put forward their views are all tly correct and partly wrong, because they, and all, claimed that their own special claim s the cause, and because they did not take into isideration that the causes are not one but many. hould be pleased to have subjects, as you sugt, at different stages of the trouble, as someng that has hitherto escaped notice may be ught to light. Unfortunately any research work ails a large amount of time and money, as eximents, etc., have to be conducted and repeated ndreds of times before it is safe to come to any inite conclusion.

ANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES.

Quarterly Meeting of Delegates will be held in the Master lders' Rooms, Mount Street, Preston, on Saturday, March 21st. ir to be taken at 3 p.m.

genda.—(1) Minutes of last quarterly meeting. (2) Letters communications. (3) Delegates to National Poultry Council ting, to be held on the 15th and 16th April, at Chester. (4) ish Broadcasting Co., March 26th, by Mr. C. H. Dobbin, the nty Poultry Instructor. (5) Place of Federation Show for 5. Invitations invited. (6) Sub-Committee's Report, Educaal and Propaganda, Laying Test, and Finance. (7) Any other iness.

E. COLLIER, Organising Secretary.

he following Sub-Committees are requested to meet at the e place at 2 p.m.:—**Educational and Propaganda:** Messrs. W. ve, T. Edmundson, J. Whalley, Rev. A. J. King, D. Braithte, C. Longbottom, W. A. Hall. **Laying Test:** Messrs. W. mnett, H. Hayes, G. E. Leigh, W. Martindale, G. B. Tootall, Birtwell. **Finance:** Messrs. J. P. Willacy, F. Thompson, A. Walton, J. Hall, W. Kay, A. Grime.

n order to assist the Federation to complete the Standard for lity Exhibition Birds, secretaries are asked to obtain from their mbers weights of birds (as many different breeds as possible), send them to Mr. W. Grove, 18, Marshall Road, Levensme, Manchester. together with age of same.

ecretaries would greatly oblige by remitting affiliation fees for 5 as early as possible.

NAL AWARDS OF THE DERBYSHIRE LAYING TEST, 1924-5.

The winner of the Silver Cup offered for the bird which scores highest number of points during the Test is Mr. S. Ryle, nhoe House. Castle Donnington, whose R.I.R. 317 scored 241 nts. The Medal awards are as follows:—

Section 1.—Gold Medal: The Alvaston Poultry Farm, Derby: W. 310, 311, 312—585 points. Silver Medal: Mr. S. Ryle, Castle nington, R.I.R. 317, 318, 319—546 points. Bronze Medal: Mr. D. Dearden, Ollerton, Newark, W.W. 336, 337, 338—392 points.

Section 2.—Gold Medal: Alvaston Poultry Farm, Derby, W.W. —226 points. Silver Medal: Mr. J. K. Peach, Alvaston, Derby, .R. 316—208 points. Bronze Medal: Mr. C. Gresley, Derby, .R. 333—180 points.

Section 3.—Gold Medal: Mr. W. Sharman, Derby, R.I.R. 321— points. Silver Medal: Mr. W. H. Bech, Derby. W.W. 344—76 nts.

Section 4.—Gold Medal: Mr. P. Knowles, Sandiacre, Derby, L. 146, 147, 148—443 points. Silver Medal: Alvaston Poultry rm, Derby, Ancona 130, 131, 132—376 points. 132 died early in ember. Bronze Medal: Mr. T. D. Willcocks, Norwich, W.L. 141, 142—319 points.

Section 5.—Gold Medal: Mr. C. Gresley, Derby, W.L. 143—215 nts. Silver Medal: Mr. and Mrs. Lipscombe. Littleover, Derby, L. 150—180 points. Bronze Medal: Mr. J. Godfrey, Bolsover, esterfield, Black Leghorn 144—174 points.

Section 6.—Gold Medal: Mr. F. Goodall, Alvaston, Derby, W.L. —210 points. Silver Medal: Mr. J. Parkes, Burton-on-Trent, L. 138—116 points. Bronze Medal: Mr. S. Watts, Sheffield, W.L. —38 points.

Five of the six Monthly Ribbons go to fresh birds, also W.W. and W.L. 152 tie for highest number of first-grade eggs over sections in February.

Some Fruit-Growing Notes

to help Poultry-Keepers.

By F. W. WHEELER, F.R.H.S.

SPRAYING NOTES.—I take it that the spraying machines have been overhauled, and put into good working order, but, having had such continuous rainy weather during the past three months, there has been little chance of spraying the fruit trees with the usual Caustic Winter Washes for general cleaning purposes.

I think the wet weather has been the same all over the country, as here in East Kent, and even if spraying had been attempted, the rain would have considerably reduced the power of the washes for destroying moss, lichen and eggs of certain insect pests.

There seems now some prospects of better and more suitable weather for this work, but by the time these notes are read it may be too late to use Caustic Washes, unless there are no signs of the swelling of the buds, but if there are signs of renewed life then much good can be done by an application of one of the many good Lime-Sulphur washes that are put on the market by reliable firms. So I should advise this being done whenever suitable weather allows. Unless the trees are very dirty, or your are dealing with a neglected orchard, the Caustic Winter Wash should only be necessary about every third year, and the Lime-Sulphur washing should keep the trees in a clean and healthy condition.

The cost of these washes is only just over a penny a gallon, and it is surprising how quickly you can do a small orchard, which makes it well worth the trouble and expense for the good results that follow. Another day I might give a few more detailed notes on this subject of costs, but I want now to answer two letters sent to me.

REPLIES.—(1) D. J. G. re "PRUNING OF NEWLY-PLANTED BUSH TREES — APPLES, PEARS AND PLUMS."

I am a strong advocate of leaving the pruning of trees that are planted after Christmas until the following winter ; then they should be cut back hard, removing about one half or even two-thirds of the wood as at the time of planting. When doing this carefully select good outside eyes, so as to start the foundation for strong and for symmetrically shaped trees. In some cases two suitable side eyes must be chosen to increase the number of leaders, or to fill a gap. My chief reasons are that with the trees that are planted in the early months of the year ,and pruned soon after, there is always a great risk that the new shoots that will be wanted for making a good head to the tree may not break from the selected eyes where you cut back to, but instead we shall probably find the breaks will come where not wanted. Another reason for not pruning newly-planted trees until after the summer is that it will furnish the trees with more foliage to help the growth and encourage the root action. One object of planting in November or December is that the roots begin to get a quicker hold of the ground before Christmas, especially when we have a warm and mild autumn. When I say do not prune newly-planted trees, it must always be remembered that there are generally some unnecessary shoots that should always be cut away immediately trees are planted, such as overcrowded growths or shoots crossing others or growing into centre of the tree head. This is not a question of pruning as understood for fruit formation, but the entire removal of what would be useless wood if left.

Plum trees were mentioned in your letter, so let me add, "en passant," that later on you must not be too free with the knife when pruning, as this stone fruit does not like it. Aim chiefly at simply cutting away only the overcrowded growths and dead wood.

As regards your late-planted red currants and gooseberries. If they are quite small bushes I should also let them alone, for this winter, except for entirely removing crowded or crossing shoots. Perhaps you may remember my articles on pruning these small fruits, and the detailed description I gave as to the opposite treatment required for red currants as against that for black currant bushes; they appeared in Volume 8, October 31st and November 7th, 1923.

(2) Reply to N. S. W.—"PLUM TREE SUCKERS." As I cannot tell the original stocks used for the plum trees in your orchard, we must assume that they are on some of the usual plum seedlings—Mussel, Breassel, or perhaps Myrobalan stock, and consequently the suckers are not likely to yield any crop that will sell commercially, and you are not likely to see any return for your labour in replanting and trying to cultivate these suckers in your poultry runs. A much better proposition would be that of buying next autumn some good half-standard apple trees and of a good market variety, choosing only two or three kinds according to the space at your disposal. If I can help you further in this matter, please write me again.

Returning to the subject of your numerous suckers, I should imagine from the particulars you sent that these must be drawing considerable nourishment from the plum trees, so if you find this year that the plums are a good variety and quality it will then play you to remove these useless suckers. Take care not to further damage the roots, as it is possible that the excessive number of these were caused by your predecessor carelessly digging amongst the roots or too closely up to the trunks of the trees.

Menadews, St. Clements, Truro.

Dear Sir,—"Eggs" is packed full of information from cover to cover, and contains more practical information than any two contemporary journals.

Thanking you, yours faithfully,

(Signed) L. CHOAK.

Correspondence.

WHITE BRESSE CLUB.

To the Editor of "Eggs."

Dear Sir,—I have recently received a list containi
names of officers, rules, etc., of the new club purpor
ing to be for White Bresse. One of the objects
this club is stated to be "breed characteristics," a
we are also told in this little book that the standa
sets out the ideal. Any breeder with a grain of expe
ence of the Bresse fowl can see at a glance that t
standard of excellence adopted can only result in cros
bred fowls, and an outcross of any kind can only pro
detrimental to the breed.

First of all, take the head points of the male. Th
club requires: "A comb with deep serrations, follo
ing the curve of the head, and a fairly long beak
horn colour." A White Leghorn must be used
produce such a head, therefore it will readily be unde
stood why the following phrase appears in the notes
—"It is realised that dark eyes will call for gradu
concentration." The pure-bred White Bresse shou
have a comb of medium size, evenly serrated, fine
quality, and the heel of the comb to be well clear
neck and back, and a short strong beak of a bluis
white colour.

Next, take the body:—The new club requires
moderately short back with *narrow* saddle. Where
the true Bresse should have a well-built body, de
breast, with a good width and length of back. It
also noticeable that white or yellow shanks are on
considered serious defects, and not given as a d
qualification.

It is incomprehensible to all those who have the re
interests of the breed at heart, to know why t
promoters of this club should attempt to destroy t
whole character of one of the longest-established bree
in existence; one that has proved its economic valu
It is a grave injustice to the Bresse, and ought not
be tolerated.

The Standard of Excellence of the British Bres
Club is practically the same as that of the Bres
Club de France, and I have been informed that it
the only Bresse standard that will be recognised
the Poultry Club.

F. ONSLOW PIERCY.

THE WHITE BRESSE CONTROVERSY.

To the Editor of "Eggs."

Dear Sir,—"Ex-Graham" in your issue
February 25th assumes that the newly-form
White Bresse Club has been set up with the so
object of altering the present standard of t
breed. Speaking as one who has taken no acti
part in the controversy—which has only just start
in "Eggs," but has been raging with violence

r sections of the poultry press—I should like
ut before your readers what I believe to be an
assed view of recent events.

e reasons for setting up the White Bresse
appear to be two-fold :—

It has long been felt that the white variety
as not been given equal treatment by those
esponsible for the management of the British
Bresse Club ;

It is felt that the awards at the club shows
nd other principal shows tend to encourage
" small, pretty birds " which have no economic
r utility value, and which could not be in-
cluded in any utility breeding pen.

th these points contain a measure of truth,
gh it is easy to over-emphasise them, which
ibly some of the promoters of the new club
ending to do. At the same time, the follow-
acts are of interest. In regard to (1) no one
ines that the apparent neglect of the white
ty in favour of the black is intentional. Con-
ing that the originators of the B.B.C. were
tically all breeders of the black variety, it is
t all unnatural that they should tend to prefer
variety to the white. Nevertheless, it is un-
nate that, to date, the white variety has never
von in a mixed class, nor has it won a special
when competing against the blacks at the
shows. This is doubtless partly to be ex-
ed by the fact that the Whites are admittedly
difficult to show on exhibition points. But
it comes to a show like the National Utility,
to be observed that the Black breeders, on
unt of some supposed disadvantage, refuse to
at all.

ith regard to (2), judging has most certainly
ed to favour exhibition points regardless of
type. The awards at Olympia last year seem
ave been given almost entirely on eye colour
sooty face to the exclusion of utility points.
ing wind that this was likely to happen, I
elf entered a White Bresse pullet which was
gest on these points. It gained a prize, but
winter record for three months was only 18
, and it was too small for inclusion in any
ding pen. It must not, of course, be inferred
this that all the prize-winning birds were of
type. Nevertheless, the fact that such a bird
d gain a prize is at least indicative—not that
standard of the breed is at present a bad one,
that it is not always sufficiently adhered to
udges.

far as I can see, the only difference the new
has made in the standard is to revert to the
Poultry Club standard of 5 lbs. for a pullet.
I consider to be going too far in the opposite
tion.

seems inevitable in any breed club that there
ld be a conflict between the fanciers, the
llers, and the advocates of increased size.
I think that readers of " Eggs " will appreciate
the future of a breed like the White Bresse
in its grand commercial utility qualities rather
than in its sooty face. Why cannot the fanciers recognise that a bird is not characteristic of the breed unless it has utility qualities, and the handlers realise that increased size is not going to improve a light breed? My own view is that, though the formation of a new club is unfortunate and its re-absorption in the old club desirable, this happy event can never take place until both sides cease " blackguarding " each other and come to recognise that neither side has a monopoly of truth.

Yours faithfully,
A. H. CAPPER.

·5% HATCH.

To the Editor of " Eggs."

Dear Sir,

In December last year I wrote to the manager of a well-known large Scottish poultry farm for prices, etc., for White Wyandotte Eggs for hatching. About a fortnight later I heard from him, saying he had started a poultry farm on his own and gave particulars of the Breeding Pen, naming three or four wins in local utility shows. I gave him an order in the first week of January for 240 eggs to be delivered on the 27th of that month, cash with order. On the 26th I sent cheque for the full amount, 7s. 6d. per dozen. I received the receipt and a note saying the eggs had been despatched that day, the 27th. On February 2nd they had not arrived. On Tuesday, 3rd of February, I wired asking why they had not come, and also got the Railway Co. to take the matter up. On Thursday, 5th, sent a prepaid wire of enquiry, to which I received no reply. On Saturday, 7th, a letter came saying due to cold weather he was unable to despatch till Monday. The eggs arrived on Tuesday in a 20-doz. Danish egg box.

The eggs were anything in colour, from Leghorns to Rhode Islands ; the size varying from that of Bantams to almost Duck size egg. On the 10th day of incubation I tested out the " Clears," eight dozen in all, and returned the same. About a week later the Railway Co. wrote saying there was no person at that address, and the eggs must be going bad, which they returned to me.

I wrote him by return demanding an explanation of his behaviour ; this was returned through the Dead Letter Office. I went over to his address, about 80 miles away, as I had 400 more eggs on order to be delivered. Finding the house empty I enquired of the neighbours what had become of his farm, and to my surprise learned he had never had a hen on the place, and had apparently been unemployed, living there for months. Finally that he had left for Australia three weeks ago.

The result of the hatch is ten chicks, half of which are crippled and the remainder of the eggs are addled.

The conclusion I have come to is, that they are "Shop" eggs, probably Danish, hence the box. If this catches the eye of the "Immigrant to Australia," perhaps he will make reparation and turn over a new leaf. The loss will be self-evident to all S.P.B.A. members. Moral is, "Know your man every time."

Yours truly,
"FASLAN."

COMMUNITY POULTRY FARMING.

To the Editor of "Eggs."

Dear Sir,—On page 142 you ask for opinion as to the necessary capital probably needed. First of all, failing a pension or income of at least 35s. a week for 2½ or 3 acres, provision must be made for living in the strictest economy till some income begins to come in. Ten acres of land at £6 10s. an acre equals £65. Materials for a bungalow about 40 ft. by 22 ft., stout timber framework, lined inside, outside, 2 roof asbestos sheets, ¾ in. thick. To begin with four rooms, leaving about one-third the back end unfinished, inside to be used as a food store, egg packing, carpenter's shop, etc., thus obviating an outbuilding at first. Later on make two more rooms. I assume that every "would-be" poultry farmer is capable of using carpenters' tools, and could, with help, put up such a building, as windows and doors can be bought ready made. Four breeding pens, say two White Leghorns, two Light Sussex, four cockerels at about 42s. each, 40 yearling hens about 7s. 6d. each, two semi-detached small houses, and wire netting. Materials for incubator cellar about £15. Three incubators about £24. Nine small houses and hovers, wire netting. Sitting boxes can be made out of grocers' boxes at about 4d. each. Ten years ago I made a dozen **large double** coops out of Meyer sugar boxes, taken to pieces and remade, loose floor, half front wire netting, both end of roof to lift up, felted, shutters, for about 3s. each.

As chicks grow up, laying houses would be needed. The cost of material for all these things can easily be worked out, as advertisements of timber, illustrations of houses, etc., are plentiful in "Eggs," and a little calculation will show cost.

Later egg boxes will be needed. I make excellent ones to hold 120 eggs from International Stores' square butter boxes, cost 4d. each, cardboard divisions, **extra stout,** to hold 30 eggs, cost about 54s. gross, nearly everlasting; hay makes good packing.

The cost of rearing pullets to laying age may be taken at about 7s. 6d.

No profit must be drawn out for two or three years; every shilling left in the business to provide more laying houses, pullets, etc.

It will be very interesting if several readers will give their views on above.

As regards Community Co-operation, a motor van can, I believe, be bought for £6 so. Garage would not cost much for mater

If the eight Communists could put up, say, each a windmill could be erected to pump w grind corn into meal, generate electric light,

Probably the best plan would be to set an acre for these things, erect a bungalow, a shed for mills, and pay a slightly disabled m run the motor van, mill, etc., who would b sponsible for upkeep.

All eggs could be bulked and sold in quant Cockerels and hens properly fattened and so quantities. Each member could specialise in one thing—bees, goats, fruit, etc., must no overlooked.

Yours truly,
THOS. N. DAR

P.S.—I hope to learn in a few days th subsidy will be paid on these bungalows.

COMMUNITY POULTRY FARMING.

To the Editor of "Eggs."

Dear Sir,—With reference to your article o above subject. In my opinion Community Po Farming, or any other kind of community duction, will not work in the British Isles. I never been successful in the long run in country.

It failed at Babel, it failed with the Christians. I believe the Salvation Army tri in Essex. The place was finally sold by auc

Would your correspondent sacrifice his per liberty and be governed by some one else? poultry-keepers can supply all the eggs need these Islands if they set out to do so, and price that will keep most, if not all, the fo eggs out, but it will have to be done by indiv enterprise. Mr. Edward Brown told us in a vious number of "Eggs" that the price pai the imported eggs was 15s. 3d. per 120. Sir, I contend that every egg could have been fitably produced at home and at the price pa the foreigner—1s. 6¼d. per dozen.

The cost of rearing a pullet to laying age s not be more than 6s. each after selling the su cockerels and deducting their value—this include cost of labour.

Cost of food per bird for a full year ... 10s.
Labour 2s.; total cost 18s. The average duction is about 156 eggs in her first year.

13 dozen eggs at 1s. 6¼d. ... ... 19s.
Value of hen at end of year, say ... 3s.

Total income ... ... 22s.

This will leave 4s. 9½d. per bird, or £239 1 to pay rent and interest on capital.

W. HAL

COST OF REARING PULLETS.

Dear Sir,—I see in last week's issue of our paper at the price I suggested as being reasonable for seven to eight weeks' old pullet, i.e., six illings, is challenged by Mr. Whitlow.

I will attempt to defend my statement :—

	s.	d.
st of day-old chick (not bought)	1	3
od for eight weeks	1	6
abour	0	6
ndries (litter, depreciation, repairs, insurance, etc.) ...	0	3
	3	6

On the assumption that the sale of cockerels pay r their breeding purposes, I should have thought at six shillings was a good return for 3s. 6d.

Mr. Whitlow next asks why a commercial egg rmer cannot rear pullets at the same price as nyone else. My point is that his pullets are no ood to him unless they are early-hatched birds, which case he will, of course, have to have ouble or treble the amount of brooder and incu-ator accommodation going at the same time, and, s I pointed out in my first letter, this will increase is depreciation figure enormously, which figure, hen divided over his pullets, will, I think, show price in favour of buying his replacements.

Yours truly,
"OBSERVER."

THE BEST EGG TESTER.

Dear Sir,—May I take up a few lines of your aluable space to try and help some of your eaders, or perhaps many, by describing the most fficient way of testing eggs, either from incu-ators or from hens?

The only instrument required is a simple electric ash-lamp. Place the egg tray on a table and lide it halfway off, holding the one half off the able. Take the flash-lamp and run along under the ray (providing the light will penetrate whatsoever e eggs are laid on) from one egg to another, nd pick out the infertiles, etc., as you come to em. If the trays are too large get someone to old them, or put them between too tables. This enders the laborious method of picking out every gg and holding it up to some paraffin lamp or ther so-called up-to-date appliance. I wonder ore people have not found this out before, or eard of it. Although it was published for me in ne of the other poultry papers some two years go I have not come across, or heard of anyone, ho has utilised it. A simple flash-lamp is also e handiest instrument for testing eggs from nder hens. I have several thousand eggs to cubate every year, and never use anything else r testing. I can test 300 eggs in one minute.

Lastly, let me impress on readers the absolute ecessity of removing every infertile, addled, or ead egg from the incubator as soon as it is possible to determine it, as it very likely means the difference between good and bad hatches to those people who look after the rest properly and eliminate this. May I tell you that until I took up "Eggs" I was always changing poultry papers, but now I need no other.

Yours truly,
L. H. DALTON.

STORAGE OF EGGS FOR INCUBATION.

Dear Mr. Newman,—A few weeks ago in an interesting article in "Eggs" you were writing about the storage of eggs for incubation.

In connection with the same subject I recently made a small but definite experiment on storage of eggs, which may be of general interest.

Ten eggs were taken from a breeding pen on 21st and 22nd of December, dated, and placed in a wooden box containing bran, and then covered with bran, the eggs being placed on their sides. The temperature of the room varied during storage from 35 to 45 degrees Fahr.

On January 10th these ten eggs were placed in an incubator, together with ten more from the same pen, collected during the two previous days—8th and 9th January.

Two eggs of the above twenty were removed as clear, and on 31st January thirteen hatched, two dated 22nd December, being dead-in-shell, and three, dated 8th or 9th January, were dead-in-shell.

Of the chicks hatched, all are robust and hardy. The experiment, though not extensive, does at least show that the chances of hatching from eggs suitably stored for a period of three weeks are not definitely diminished.

Yours truly,
GERALD FOX.

CO-OPERATIVE EGG-PRESERVING.

Dear Sir,—With reference to the letter of Mr. Atkins, Hermitage, Newbury, in March 4th issue of "Eggs."

He wishes to form a Co-operative Society for the preserving of eggs.

I should like to state that I am in complete agreement with your remarks at the end of his letter, and would raise another point.

I believe that British Egg Producers purchased a preserving plant, and endeavoured to run it.

In which case it would surely be better for Mr. Atkins and his friends to join an established society, rather than to form a new one.

Co-operation may be the aim for all ills, but piling one society on top of another is surely bad!

Co-operative Poultry Products is still another Society which started with a big flourish, but no news of it has been published for many months.

Before starting new societies, I think that existing ones should be supported and made to work, or else they should be wound up.

Yours faithfully,
A. COLOMBE, F.Z.S.

EGGS BY WEIGHT.

Dear Sir,—Some time ago I remember reading an article in "Eggs" with regard to the better prices obtained for some foreign eggs, when compared with the prices obtained for English eggs. Now, as every item is in a reality a big item, when it is connected with eggs, and as it seems probable that a Bill will shortly be presented to Parliament for making the marking of foreign eggs compulsory, would it not be a good time for us as a society to press for the compulsory sale of eggs by weight? Surely it would be in the producers' favour in every way, and also in the consumers? I think you will agree that the present difference in price, which has just started in favour of certain foreign eggs, is a real disadvantage to us as producers, and it seems to me to be chiefly our own fault, with no remedy if we try to work individually.

To convey a little more clearly my meaning, I will take my own case as an example, as there must be thousands more in the same boat. I sell my eggs to a grocer in London, grading them as follows:—No. 1 grade, all eggs two ounces and over; No. 2, 1¾ ounces and under two ounces; No. 3 grade, all eggs less than 1¾ ounces. This is where the unfairness of the present system comes in, to my mind. No. 1 grade last week was quoted 2s. less per 120 than the Danish 18 lbs. eggs, and this week 2s. 6d., and this difference usually continues during our worst period—the glut season. As soon as I saw the Danish egg beating us for price, I looked for the reason, and, of course, it was plain to see—the Dane is actually selling by weight, then why not us? I took the trouble to weigh a case of my eggs, grade No. 1, and found they were going 18 lb. to the 120, but still I could not go to my buyer and say, "I want 2s. more per 120," as I have an agreement with him for the highest prices for the different grades of English eggs as per Central Market report, quoted every Tuesday in the "Daily Telegraph." Now, to me this is a very big item, as during the glut season, now commencing, I shall be having anything from six to eight 30-dozen cases of eggs weekly, and I leave it to my fellow members to think it over seriously, whether it is worth while us fighting for eggs by weight, and so get a little more added to the very low wages we are now receiving for our work. Trusting you will bring this to the notice of our members, and possibly give your views on same in "Eggs."

M.S.P.B.A.

To the Editor of "Eggs."

Dear Sir,—The Kent Branch of the National Farmers' Union has appointed a Poultry Committee having the same powers as their other various committees. This Poultry Committee has now been in vogue for a few months, and at our last meeting on January 15th began the function in promising style, the things under discussion being both interesting and to the point.

I believe this is the first time that such a committee has been instituted by any branch of the National Farmers' Union, and my object in writing this is to ask those members of the N.F.U. interested in this direction up and down the country to try and get their various branches so interested in the poultry industry that they also will begin to move in the same direction as the progressive Kent Branch have. I am aware that some farmers in some counties look upon the poultry industry with a great deal of apathy. Probably 10 or 1 years ago our Kent farmers would have smiled i any one had suggested forming a Poultry Committee of the N.F.U., but in recent years they have discovered that poultry is a very importan branch of their farming, and their interest is now very real, and large numbers will remain behind and listen to lectures on the subject after a genera meeting and will ask many questions that are o real benefit to all.

One branch by itself is perhaps not able to do much, but if poultry folk that are N.F.U. members will put a little energy into pushing these committees forward, we, in a short time, should have a large number of such throughout the length and breadth of the country, and then this strong organisation should be a tremendous aid to the various poultry societies which are striving to help our industry to that end which we all hope for.

Believe me, yours faithfully,

Mill Street, Maidstone. W. VENN CARR.

BOARD OF AGRICULTURE FOR SCOTLAND.

EGG-LAYING TEST, 1924-25.

REPORT FOR THE FOURTH PERIOD.—7th January, 1925, t 3rd February, 1925.

Throughout the fourth period of the Test, as during th third, the weather showed great variations unfavourable t high egg production, and again necessitating spells of tota confinement for the birds. Moulting is still prevalent, especiall in the Duck Section. Only three birds have been broody, an the general health of the stock remains good.

The total number of pullet eggs laid during the period ha been 5,299, an average per bird of 13.31, as compared with 5,87 an average of 14.65 last month, the average per bird since th commencement of the Test standing at 52.73. The highes individual record for the month under review is 26 eggs laid b Mr. Scott Miller's Light Sussex pullet, No. 547 (pen 92), whic laid 27 eggs during the previous period. The second is 25 egg all first grade, laid by Mr. W. Bryce's Rhode Island Red pulle No 391 (pen 66). Mr. Bradbury's pen of White Wyandotte (pen 54) now stands first with a Test score value of 431.

The number of eggs laid in the Duck Section is more sati factory, the total for the four weeks being 1,124, an average pe bird of 10.5, as compared with a total of 605 and an averag of 5.60 last month. Duck No. 54 (White Runner) belonging t the North of Scotland College of Agriculture, which laid eggs during the previous period, laid 28 eggs this period, an has now a sequence of 52 first grade eggs. Mr. Darrah's duck No. 33 (Khaki-Campbell), Mr. Godsmark's duck, No. 65 (Whit Runner), and Mrs. Harvey's duck, No. 72 (Khaki-Campbell have each laid 27 first grade eggs during this period. The lea ing pen in the Duck Section is still pen No. 11 (White Runner belonging to Mr. H. S. Godsmark, with a score of 358.

Figures are eggs and points respectively:—

Section 1.—White Leghorns.—J. Prentice, Uddingston, 43 428; J. W. Dobbie, Rothesay, 418, 411; J. & W. Purdie, Lanark 399, 398.

Section 2.—White Wyandottes.—W. Bradbury, Tottington Bury, 440, 431; R. A. Oliver, Boarhills, Fife, 373, 370.

Section 3.—Rhode Island Reds.—H. P. Roche, Stevenston 393, 391; Mrs. Logan, West Kilbride, 384, 383.

Section 4.—Non-Sitters other than W. Leghorns.—Jackso & Johnstone, Stonehouse, 315, 313; A. Watson, West Linton 289, 289.

Section 5.—Sitters other than in 2 and 3.—J. Adams, Clelan Lanarkshire, 411, 411; O. C. Browne, Scunthorpe, Lincs., 351, 35

Section 6.—Ducks.—H. S. Godsmark, Ashford, Kent, 403, 35 Miss Harrison Bell, Welwyn, Herts, 243, 221.

CO-OPERATIVE EGG PRESERVING.

To the Editor of "Eggs."

Sir,—The committee appointed at the recent eeting at Anderton's Hotel, and entrusted with e work of putting the scheme for the formation a Co-operative Egg Preserving Society into finite shape, have now, after meeting with many ficulties, nearly completed their task.

The rules of the Society have yet to be approved the Ministry of Agriculture, and until this has en done it is not possible to publish a detailed heme, but it is anticipated that this will be complished within the next few days, and, as ere is no time to be lost if the Society is to be any benefit to members this season, a public eeting (open to all poultry farmers) will be held Anderton's Hotel, in Fleet Street, on Wed-sday, March 25th, at 3 p.m. Full details will en be available, and it should be possible to form Co-operative Egg Preserving Society imme-tely, and for the Society to commence the work preserving eggs for its members as soon as the cessary share capital has been subscribed.

The committee will recommend the lime and salt thod of preservation for use this season, and y have in view suitable premises where the gs can be treated and stored. It is anticipated t the Society's operations will be carried out on quite a modest scale this season, and that e man will be sufficient to deal with the eggs eived. There will be a considerable amount of rical work to be done in connection with the ciety, but the committee realise the necessity of ping down expenses and are in favour of pointing an honorary secretary, for the first r, for which post they have a suitable volunteer. Members of the Society will have to take up re capital of a nominal value equal to the value the eggs they wish the Society to preserve for m. These members will then be entitled to re-e a loan from the Society, each week, equal he market value of the eggs they have sent for servation during the week. When the preserved s are sold the Society will retain sufficient ds to repay these loans and defray working enses. The balance will be divided amongst nbers, as a bonus, in proportion to the number ggs sent by them. This is equivalent to buy- the eggs, as they are received from members, it has to be done in this way for technical ons.

is impossible to give more than the merest ine of the scheme in a letter, and readers who interested will have the opportunity of learning particulars by attending the meeting at erton's Hotel on March 25th.

s soon as the Society's rules have been ap-ed, full details will be sent to you, Sir, and I you will be able to find space to publish them.

Yours truly,

F. C. ATKINS.

S.—The members of the Committee referred to are: Major Wallington, Major Chapman, Capt. Day, and the writer.

The preliminary meeting to which you refer in your footnote to my letter, published in your issue of March 4th, was held to announce to the Ministry that the rough scheme would appeal to poultry farmers and to get them to make a statement. None of the Ministry's credit schemes were really applicable, but it was hoped to find a way to make one or other of them serve, and the Ministry were naturally not prepared to waste time on the matter unless it appeared likely to benefit poultry farmers. No **detailed** scheme could be, or was, put forward at the meeting, as everything depended on the extent and method of obtaining advances from the Ministry. It is this matter which has hung things up since, but it now seems practically settled, although at the moment of writing there seems nothing definite and final.

THE NORTHERN UTILITY POULTRY SOCIETY'S LAYING COMPETITION, 1924-25.

Fourth Report, 24th January to 20th February, 1925.

The weather has remained open, with gales on many days, in common with most parts of the country. Snow has fallen a few times, but has never stayed more than a day, and very little frost has been experienced. Very little wintry weather has come our way during the whole of the winter period.

The health of the flock has been normal, and at the end of the term nine birds are in hospital. All are recovering, with one exception. Six birds have died, fourteen have yet to lay their first egg; two in this class have died during the month from peritonitis.

DUCK SECTION.

All these competitors are in good health, although very little improvement has to be recorded in egg production. Eight have yet to lay their first egg.

Summary of leading pens. (Figures are Eggs and Points to date respectively):—

Section No. 1. Championship (10 Birds).—Messrs. Longworth Bros. (W.L.), 485, 485; Mrs. Canning Roberts (W.L.) ,459, 459; Mrs. Crookes (W.W.), 453, 453; Leslie Williams (W.W.), 453, 453; Arthur Snowden (W.L.), 530, 430; G. H. Rayner (W.W.), 388, 388.

Section No. 2. White Leghorns.—Norman F. E. Kimberley, 293, 293; Wm. McMahon, 280. 280; F. R. Welch, 271, 214; O. Darbyshire, 217, 213; James A. Rigby, 212, 212; J. B. V. and W. Cummings, 218, 204.

Section No. 3. White Wyandottes.—Thomas Pinder, 331, 331; Mrs. Alec Wilson, 297, 297; Robert P. Virtue, 282, 282; J. E. Helm, 244, 244; James Booth, 243, 243; George Ware, 279, 243; John D. Lyon Smith, 235, 235.

Section No. 4. Any Other Variety (Non-Sitting).—Philip K. Berry (B.L.), 206, 206; Robert A. Fawsett (B.L.), 158, 158; Ernest Jackson (B.L.), 104, 104; M. Flaherty (A.), 98, 98.

Section No. 5. Any Other Variety (Sitting).—Tom Gardner (R.I.R.), 297, 297; A. Sharples (R.I.R.), 280, 280; F. and T. Lumb (R.I.R), 255, 255; James M. Thomas (R.I.R.), 238, 238; C. and A. W. Kidner (R.I.R.), 224, 224.

Section 6. Two Birds.—E. J. Stone (W.W.), 122, 122; Bolton and Gardner (W.W.), 117, 117; Sam Lord (W.W.), 103, 103; Mrs. A. Stow (W.L.), 100, 100; J. Gordon Herbert (R.I.R.), 90, 90.

Section No. 7. Single Bird.—Frank Heyworth (W.W.), 82, 82; H. Percy Thubron (W.W.), 82, 73; R. K. Tallis (W.W.), 72, 72; Wm. Edmondson (R.I.R.), 59, 59; E. J. Stone (W.L.), 58, 58.

Section No. 8. Small Breeders.—E. M. Saul (W.L.), 251, 251; Wm. Machin (W.L.), 286, 231; Mrs J. H. Early (W.W.), 233, 227; Ellis Jenkinson (W.W.), 189, 189; Samuel Millward (W.W.), 240, 181.

Section No. 9. Cross-breds.—Mrs. Clara Egar (B.M. x W.W.), 339, 339.

Section No. 10. Ducks.—Wilson Beattie (K.-C.), 234, 234; Mr. and Mrs. Gwynne Evans (K.-C.), 232, 232; Chivers and Sons (K.-C.), 133, 133; Oscar C. Brown (K.-C.), 128, 128.

Section No. 11. One Duck.—Oscar C. Brown (K.-C.), 61, 61; Mrs. E. M. Kirkley (W.R.), 32, 32; Arthur T. Marston (K.-C.), 24, 24.

PRESTON AND DISTRICT UTILITY POULTRY SOCIETY.

The eighth annual six months' laying competition was held at Woodland Grange, Penwortham, under the management of Mr. J. Rainford, who reports all birds in good health. Birds moulting: W.W. 3, 10; R.I.R., 55, 60; W.L. 2, 8. Birds broody: W.W. 32, 35.

Fifth Month's Report, January 29th to February 25th, 1925.

(Figures are Eggs and Points to date respectively).

Section 1. White Wyandottes.—J. T. Finn, 368, 3470; J. Hodgson, 329, 3062; J. R. Dawson, 315, 3058; G. H. V. Armstrong, 285, 2850; H. Pinder, 276, 2730; J. Crompton, 259, 2378.

Section 2. A.O.V. Heavy.—C. Humber (R.I.R.), 340, 3346; A. G. Ermen (R.I.R.), 268, 2622; J. J. Rawlinson (R.I.R.), 257, 2532; R. Moon and Son (R.I.R.), 267, 2382; N. Swarbrick (R.I.R.), 239, 2310; Mrs. M. Walker, 174, 1728.

Section 3. White Leghorns.—R. Moon and Son, 239, 2232; A. G. V. Ermen, 207, 2006; H. Holden and Sons, 190, 1892; J. C. Barnes, 189, 1526; E. Collier, 143, 1280; J. Fletcher, 118, 1070.

ANSWERS TO QUERIES—Continued.

L. K. L. (Redditch) has about 150 hens, and five to six hundred chickens are reared annually, most of them to supply the large house with table poultry. The laying stock is kept in units of about 15, and scattered over the park. They are fed on wet mash. The poultryman thinks if the hens were kept in larger units they would not do so well. If, however, they were kept in units of 50 and fed on dry mash the saving of labour would be very considerable. "L.K.L." now wants to know if it is practicable to rear chicks for the first three or four months on wet mash and then change to dry. On free range, under the circumstances he has described, would 50 be too large for a unit? If so, how much could the 15 units be increased without decreasing the average egg supply per bird? Where the birds are largely required for table birds I would not recommend dry mash feeding. As to the hens. The birds would not suffer if reared in units of 50, or even 100. I should not expect any material decrease in egg production. As far as egg production is concerned a dry mash would give equally good results as the wet. The chicks could be reared for three or four months on wet mash and then changed to dry for egg production. This should be done gradually. I do not consider 50 or 100 too big a unit. In my opinion, the 100 unit is the most economical of all.

J. S. (Downham) has been kind enough to send me three samples of chick feed. He asks for an opinion on them to be given in these columns. No. 1 consists of maize grits, split groats and wheat. It is a fairly good sample; the maize is rather coarse, and, on the whole, at 22s. cwt. I think the price high enough. No. 2 at 19s. 6d. contains the same ingredients, but is not such a clean sample, and the wheat is merely crushed, instead of being cut. No. 3 at 22s. 6d. does not differ materially from No. 1, but a little more coarsely cut.

T. R. L. (Rosebank) writes :—"As a reader of your paper, I would be obliged if you could enlighten me on the following questions : I put 100 pullets, on the intensive system, in a building 60 ft. x 18 ft. with 8.5 ft. x 2 ft. 6 in. windows, facing north and the same facing south. A wooden floor and two ventilators in the roof. I feed one ounce of wheat in the morning, one ounce of oats at noon, plenty of greens at one p.m., hot mash at 4.30 p.m., consisting of 3½ lbs. S.G.O., 3½ sharps, 1½ clover meal, 1½ meat meal, dried off with bran. Second day 1¾ lbs. S.G.O., 1¾ biscuit meal, 3½ sharps, one clover meal, and 1½ fish meal, dried off with bran. Grain buried in the litter. I am getting poor results. Can the above be improved? There are 75 Leghorns and 25 heavy breeds. (2) Can I rear chicks to maturity in a building as above?" The question is whether "T.R.L.'s" poor results are due to his birds or to his feeding. My own impression is that he is underfeeding. I do not think there is much wrong with it, but if I were "T.R.L." I would change the method, a
instead of giving the hot mash at 4.30, whi
means that the birds have long hours on the per
without anything to eat, give the mash as the fir
feed in the morning, a small scratch feed at mi
day and a good two ounces of grain as the la
feed, as late as possible, preferable of kibbl
maize. I do not think he is making good enou
use of maize, which is one of the finest foods f
egg production which we have. Yes, he could re
chicks to maturity in such a house as he describe
They will want careful management, and he shou
follow on the lines of the S.P.B.A. experiments
Wellingham.

T. B. (Basildon) asks as to the value of bo
meal. I suppose he means bone meal as distin
from green bone. This would have no value in t
mash unless there was a deficiency of the calci
salts or the birds were closely confined and ke
short of green food. It could not replace any
the present items in his mash, which is made
10 per cent. bran, 40 per cent. middlings, 20
cent. maize meal, 15 per cent. S.G.O., 7½ per ce
alfalfa, with 7½ per cent. meat meal. This ma
is a little deficient in the calcium, as the meat m
would contain none, and it is only represented
the alfalfa, so that the addition of 1½ per ce
bone meal would here be of some advantage.

"Cheviot" (Scotland) sends sample of oys
shell grit, which also contains what appears to
some mussel. The one fault with it is that it
too coarse. The parings are of good avera
quality. Home-bruised oats—I cannot see
object in bruising oats. Nothing is to be gai
by it, and there would appear to be much was
As a sample of bruised oats they are good, but
poultry the bruising does not seem of much val
He sends a good sample of dry chick feed.
only objection I have to it is that it contains rat
too much millet. In answer to his question as
what age he could advantageously give the ho
bruised oats to young chicks. There is a treme
ous lot of husk in it, but this they would not
I would not, however, care to give it to them un
two months old. I am sorry I cannot tell
where he could get my formula already mixed
reliably in his district in order to avoid carriag

"A Member" (Limerick) sends a sample
oat dust, which he describes as "dusto," and a
its feeding value. I used this some time du
the war when everything else was scarce, bu
is hardly a food which I could recommend n
In reality it consists of the ends of the grain, p
hairs, and some particles of flour, and a good
of the husk. Samples vary a good deal in qua
The wheat dust is the better of the two. I do
consider it worth the money. Nor do I cons
the maize dust worth 9s. per cwt. I do not th
that any of these waste products which he
sent are worth more than 5s. cwt. At that p
they might be perhaps economically used
other ingredients.

POST-MORTEMS—Continued.

J. P. The post-mortem examination of the three-eek-old chick showed the cause to be pneumonia, ie, I should say, from the fiery appearance of the ternal organs, to foul air or fumes in the brooder. I ould advise looking into the ventilation and heating paratus of this particular brooder, in which the losses ive occurred, and make such alterations as are neces-ry to prevent a recurrence of the trouble.

W. W. The examination showed the trouble to be nt gleet, a contagious disease spread mainly by the ale bird. I should advise an inspection of the males id the segregation of any showing any suspicious gns, such as discharge or irritation in the neighbour-od of the vent. The disease is most difficult to treat, id it is doubtful if it is safe to use either sex for eeding purposes, even after an apparent cure. The eatment consists in cleaning up the region of the nt with salt and water, one teaspoonful to the quart boiled water, and a little of this should be injected to the vent with a small syringe, and then swabbing e vent inside and out with a lotion prepared by dis-lving fifteen grains of chinosol in eighteen ounces of iled water, and adding two ounces of glycerine to ake a pint. A little vaseline or other bland ointment eared round the vent will prevent the discharge from itating the skin, and make the daily cleaning up ocess much easier.

W. H. W. The post-mortem examination of the W. eghorn cockerel showed him to be suffering from an itation of the bowels, due to heavy worm infestation. round worm, the Heterakis Papillosa, was the para-te in question, which, partly by the irritation they oduce and partly by the absorption of their waste oducts, often cause nervous disturbances by reflex tion. This would explain the hackney action. I ade a careful miscroscopical examination for coccidia, it am glad to say did not find any. It is quite pos-ble that some of your other birds may have become fested from this one, and it would be wise to examine e droppings from time to time to make sure. A good rmifuge for round worms, for individual treatment, three drops of oil of chenopodium, ten of turpentine, id a dessertspoonful of castor oil. This is most easily ven with a syringe, through an india-rubber tube ssed into the crop. For mass treatment one tea-oonful of powdered pomegranate root, mixed in the ash for fifty fowls, is quite effectual. A week's course laxatives, such as Epsom salts in the drinking water, id a fast of twenty-four hours should precede either of e above lines of treatment.

C. E. S. S. E. Septicaemia, due to the absorption decomposition products of several dead ova in the arium was the cause. This condition is fairly mmon in highly fecund birds, or in those that have en unduly forced, either by too stimulating a diet, by the use of condiments and spices. Certain kinds foods have a direct action on the ovarium, and ould be discarded for a time in all troubles of that gan. Of these maize and meat or fish meal are the ost important. I should advise fasting the flock for enty-four hours, and then giving fifteen grains of glauber salts per head in the first mash of the day. The salts should be repeated twice weekly for two or three weeks, a plentiful supply of green food provided, and the full ration only approached again by degrees.

CORRECTION.

Regarding Report of Indian Egg-Laying Test. Mr. Walter Bradbury won the Overseas Cup, and not Mr. Warwick Rogers, as previously stated. The latter gentleman won the team prize given by Lord Dewar.

APPLICANTS FOR MEMBERSHIP.

Richardson, G. R., Ashley Cottage, Hersham Road, Walton-on-Thames.
Prout Bros., Pengarth, Crooklets, Bude, North Cornwall.
Foote, E. W. K., Burley Cottage, Ewell Ninnis, Alkham, Dover.
Adamson, A. G., Print Stile, Bidborough, Tunbridge Wells.
White, Maj. A. L. Robey, Field House, Fakenham Magna, Thetford, Norfolk.
Russell, Robert A., Market Road, Carluke, Lanarkshire.
Rowland, Brian, P.O. Box 3266, Johannesburg, Transvaal, S.A.
Tooth, W. C., 80, Broad Lane, South Kirbly, Pontefract.
Chalk, Major. T. A., Meadow Way, Somerford, Christchurch, Hants.
Goulden, G. Noel, Bretford House, Bretford, near Rugby.
Howard, Miss A. L., Hale Cottage, Painswick, Glos.
Davidson, T. H., Haddlesey Manor, Selby, Yorks.
Irwin, G. P., Shillburn, Allendale, Northumberland.
Hughes, Rev. E .O., Watt's Naval Training School, Elmham, Norfolk.
Cox, Miss J., County Offices, Naas, Co. Kildare.
Coultas, Mrs. M., The Cottage, Birchanger, Bishop's Stortford.
Hutchings, P., Ridgeway, Upwey, Dorset.
Briggs, Lady, Manor House, Wickhambrook, near Newmarket.
Glover, Maj. J. W. Thomson, Brooke House, Brooke, nr. Norwich.
Townley, D. A. L., Cray Hill, North Cray, Kent.
Sanderson, H. G., King Street, Whetstone, near Leicester.
Skeoch, David, Avenue Street, Stewarton, Ayrshire.

OUR FRONT COVER.

Mrs. Alec Wilson, of Garth, Breconshire, who is the owner of the birds depicted on our front cover, specialises in White Wyandottes, her special aim being to keep a high grade of layers, and particular attention is being paid to size of egg. This latter, Mrs. Wilson claims to have bred permanently into her strain, and she has just been notified that she has won the Monthly Ribbon at the Northern Test with the largest number of first grade eggs laid.

Her system of mating is the American—a large flock of hens and early January and February pullets with especially good cockerels. This she has found very successful.

Last year, at Harper-Adams, she held First Position during the winter for eight months.

An endeavour is being made to get hens to hatch well after a spell of laying for the first twelve months, and one hen, No. 7, which started to lay in August, had monthly records of 23, 13, 25, 22, 23, 21, 18 ,23, 22, 18, 20 and 24, was only broody once, produced 22 strong chicks out of 29 eggs put in an incubator.

Her eggs never weighed less than the necessary minimum, nearly two ounces, and rose to $2\frac{1}{4}$ ozs.

Several other hens did nearly as well last year, and the cockerels are being used throughout the farm.

This pen laid only 15 second grade eggs out of a total of 871, and dropped to third place at the very end, owing to one bird going into an early moult.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, MARCH 13th, 1925.

GRAIN AND FEEDING STUFFS.—Fair supplies of English wheat are on offer, and, although in quiet demand, recent quotations are maintained, except at Bristol, where prices are easier. Good milling samples now average 13s. 9d. per cwt. Imported wheat meets a quiet trade at less money. Feeding barley is in little request, and both home-grown and imported descriptions are reduced in price. Trade for oats is slow, but late rates are maintained for English, with the exception of white oats which are in large supply and cheaper at London. Imported oats have an easier tendency. Maize is in ample supply, and, with a poor demand, is considerably reduced in price.

Millers' offals generally experience a dull trade, and coarse middlings and pollards are easier, while bran is 5s. per ton cheaper at London and Liverpool. Meals are in quiet request, and barley, maize and bean meals are quoted at lower prices. Oil cakes generally are in little demand, and at London and Liverpool linseed cake is cheaper on the week.

MILLERS OFFALS.—Bran (British): Bristol, £9 5s; Hull, £8 2s; Liverpool, £8; London, £8 2s. Broad Bran: Hull, £9 12s; London, £9 15s. Middlings—Fine (Imported): London, £9 15s; Coarse (British): Bristol, £9; Hull, £8 5s; Liverpool, £8; London, £8 5s. Pollards (Imported): Bristol, £7 15s; Hull, £7 15s; Liverpool, £7 5s; London, £7 15s. Rice Bran: Bristol, £10; Liverpool, £9 2s. MEAL.—Barley Meal: Bristol, £12 10s; Hull, £12 13s; London, £13. Maize Meal: Bristol, £12; Hull, £11 7s; Liverpool, £11; London, £11 12s. Maize Meal (S. African): Hull, £10 15s; Liverpool, £10 12s. Maize Germ Meal: Bristol, £11 15s; Hull, £10 15s; London, £10 5s. Maize Gluten Feed: Bristol, £12; London, £11. Locust Bean Meal: Bristol, £9 15s; Hull, £9 10s; Liverpool, £10; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £12 8s; London, £13 5s. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £19 10s; London, £21.

EGGS AND DEAD POULTRY.

Full supplies of eggs sell at lower rates for practically all kinds, but a steadier tone is reported in London at the close of the week. In the dead poultry markets, fowls are becoming scarcer, and these make a little more money in consequence, but quotations for other birds are about unchanged.

Week-end Prices—Eggs (per 120): British, 14s 0d, 12s 9d; Irish, 13s 3d, 12s 6d; Danish, 14s 9d, 14s 3d; Dutch, 14s 0d, 13s 0d; Belgian, 12s 6d, 12s 0d; Italian, 12s 3d, 11s 3d; Styrian, 11s 6d, 11s 0d; Egyptian, 9s 9d, 9s 6d; Moroccan, 10s 6d, 10s 0d; Chinese, 13s 6d, 10s 3d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 8d; Irish, 1s 6d, 1s 2d; Others, 1s 9d, 1s 5d. Ducks, 1s 6d, 1s 4d. Geese, 1s 3d, 1s 0d. Turkeys, 1s 5d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 1s 6d; Second, 1s 4d. Birmingham: First, 1s 5½d; Second, 1s 4½d. Bridgwater: First, 1s 2½d; Second, 1s 1½d. Carlisle: First, 1s 10d; Second, 1s 6d. Chelmsford: First, 1s 5½d; Second, 1s 3½d. Derby: First, 1s 7d. Dorchester,: First, 1s 3½d; Second, 1s 3d. Exeter: First, 1s 6d. Hereford: First, 1s 2d. Ipswich: First, 1s 6d. King's Lynn: First, 1s 4d; Second, 1s 2d. Lincoln: First, 1s 8d. Llandilo: First, 1s 4d; Second, 1s 3d. Mold: First, 1s 4d; Second, 1s 3d. Montgomery: First, 1s 9d. Newport (Mon.): First, 1s 6d; Second, 1s 5d. Norwich: First, 1s 4d. Oswestry: First, 1s 4d. Penzance: First, 1s 1d; Second, 1s 0d. St. Ives (Hunts): First, 1s 4d; Second, 1s 2½d. Salisbury: First, 1s 4½d; Second, 1s 3d. Shrewsbury: First, 1s 6d; Second, 1s 4d. Skipton: First, 2s 0d. Truro: First, 11d. York: First, 1s 9d; Second, 1s 8d. Doncaster: First, 1s 9d.

FOWLS.

Per lb.—Birmingham: First, 1s 6d; Second, 10d. Derby: First, *6s 6d; Second, *3s 0d. Doncaster: First, *6s 0d; Second, *5s 0d. Exeter: First, 1s 9d. Hereford: First, 1s 8d; Second, 1s 6d. Ipswich: First, 1s 7d. Lincoln: First, *5s 6d; Second, *4s 0d. Llandilo: First, 1s 10d; Second, 1s 6d. Newport (Mon.): First, 1s 7d; Second, 1s 3d. Shrewsbury: First, 1s 5d; Second, 1s 3d. Truro: First, 1s 5d. York: First, *5s 6d; Second, *4s 6d.

DUCKS.

Per lb.—Exeter: First, 1s 6d. Ipswich: First, 1s 6d. Llandilo: First, 1s 10d; Second, 1s 6d.

*Per Head.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, March 18th, 1925.

CONTENTS.

EDITORIAL ... ...
WEST SURREY TEST ... ...
MODERN POULTRY FEEDING ... ...
HARPER-ADAMS' AGRICULTURAL COLLEGE LAYING TRIALS ... ...
S.P.B.A. 178-
UTILITY DUCK CLUB NOTES ... ...
ANSWERS TO QUERIES 181-
POST-MORTEMS 181-
LANCS. FEDERATION OF U.P.S. ... ...
DERBYSHIRE LAYING TEST ... ...
SOME FRUIT-GROWING NOTES ... ...
CORRESPONDENCE ... ...
BOARD OF AGRICULTURE FOR SCOTLAND LAYING TEST
NORTHERN U.P.S. COMPETITION ... ...
PRESTON AND DISTRICT U.P.S. TEST ... ...
MARKET REPORT ... ...
LAINDON LAYING TEST ... ...

Contributions.—The Editor will always be pleased to consid contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence "Eggs" to their poultry-keeping friends.

Subscriptions to "EGGS," 12s. 8d. per annum; 6s. 4d. for months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, T Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beech Rudgwick, Sussex.

All communications with regard to Advertisements should addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Stre London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first pa of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it imperative that new advertisements and alterations are receiv by FIRST POST ON FRIDAY MORNING to ensure insertion in th following Wednesday's issue. It is hardly necessary to add tha the earlier in the week we receive copy the better it is for ever one concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THI MONDAY PREVIOUS TO THE FOLLOWIN WEDNESDAY WEEK'S ISSUE.

LAINDON LAYING TEST.

Fifth Period.

Section 1 (Five Pullets, Light).—1st, F. Freeborn (W.L.), 331 2nd, H. J. Thompson (W.L.), 293; 3rd, H. Maycock (B.L.), 27 Monthly Certificate: H. J. Thompson.

Section 2. (Five Pullets, Heavy).—1st, E. V. Bazin (R.I.R.), 33 2nd, H. J. Thompson (R.I.R.), 275; 3rd, W. Bilsham (R.I.R.), 24. Monthly Certificate: E. V. Bazin.

Section 3. (Single Birds, Light).—1st, East Anglian P.F. (W.L. 87; 2nd, W. Dillinz (W.L.), 82; 3rd, Miss N. Grubbe (W.L.), 7 Monthly Certificate: H. Bush.

Section 4. (Single Birds, Heavy).—1st, C. H. Sheriden (R.I.R. 97; 2nd, H. Jones (R.I.R.). 88; 3rd, H. Bush (W.W.), 84. Monthl Certificate: J. H. Hamilton.

Section 5. (Gift, Heavy or Light).—1st, E. V. Bazin (W.L.), 87 2nd, W. Dallinz (W.L.), 74; 3rd, H. Maycock (W.W.), 59. Monthl Certificate: W. Dillinz.

First-Class Certificate for Month.—E. V. Bazin, with R.I. Red in Secion 2—23 egg—3s. 6¾d.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association
WEDNESDAY, MARCH 25th, 1925.

Editorial.

CO-OPERATION.

We have received the following letter from Colonel lbert dealing with the question of Co-operation. Enough has been written on this subject during e past few years to fill many books, and yet, so r, no scheme, which is really practicable, seems have been put forward, or at least if one has, e public generally have failed to recognise it. The following is Colonel Gilbert's letter :—

> "Dear Sir,—Regarding co-operation in the poultry business, the following extract from 'Eggs' of 25th February, 1914, may interest our members :—'In reply to 'Member,' we would say that we have a scheme in hand, and it is only for want of time that we are unable to put the scheme in practice. We hope at some future time to divulge the whole scheme to the readers of 'Eggs' and see what can be done in regard to the Co-operative Movement for the collection of eggs from the readers of 'Eggs.' We believe we have the finest opportunities that have ever been presented to any living person in regard to the supply of New Laid eggs. As we previously explained, that if this offer which has been made us was accepted, and every reader of 'Eggs' doubled the number of his birds at the present time, they would not be able to supply one half of the eggs needed to fill this one order, but to make any pretence that this order can be filled by the collecting up of the eggs in the usual way from the small people would be absolute folly. A better system of collecting would have to be made, and an extensive system of testing to avoid running the risk of any bad or doubtful eggs, and, furthermore, a cold storage would have to be erected in connection with this scheme.
>
> At the present time there is practically no system adopted in this country for the proper collection of eggs, and there never will be until someone who has the ability to organise this scheme will come forward and devote his whole time to the subject. We ourselves feel that if we were free of all other business worries and cares we could have the whole country started in a very short space of time in absolutely perfect collecting depots. There are hundreds of tons of eggs needed in all our big towns to-day, but a very small percentage of these are collected in our own country. They come from the other countries, where the collection of eggs is carried out on a proper system, and where the eggs can be more relied on than eggs from our own country.
>
> It is hard to have to admit this, but facts are facts. The retailing of eggs in the usual way to the local grocer by the local poultry dealer, and even sending eggs to the market to be sold under the auctioneer's hammer, is an absolute farce.
>
> It is a fact that our eggs to-day could realise, if marketed properly, nearly double the price they are fetching. To do anything to improve the egg trade of this country co-operation must take place, and the collection of the eggs must be made daily. Rapid marketing is everything in establishing a large egg trade. The average poultry-keeper has practically no idea whatever of the way in which his produce should be marketed. There are thousands of eggs which, if they could only be placed in the right quarter, would fetch absolutely double what the owners are receiving for them to-day, but it is the few doubtful eggs amongst them that upsets the whole business. To say that we cannot in this country compete with the foreigners is absolute nonsense, as we are living under better conditions and our climate and everything else is quite as suitable, and we can, if we will, adopt just as good a system of marketing as the foreigner does at the present moment. There is so very much to deal with, but we are hoping in the very near future we shall be able to devote a little more time to this important subject than we have latterly done.'—Editor.

From the above it will be seen that for eleven years, during which poultry plants have considerably increased, we are no nearer co-operation in the one essential matter of getting rid of our produce.

At Christmas, 1913, eggs fetched 1s. 2d. per dozen, and a week later they were down to 10d., and I should not be at all surprised to see them down to the latter price very shortly. Now for **feed**—again I quote from 'Eggs':—

February 25th, 1914—	Per ton.
Scratch Feed	£9 10 0
Laying Meal	£10 0 0
Dry Mash	£9 10 6
Bulk Feed	£8 10 0

No need to quote present prices, they are only too well known.

As I see it, we, as a whole, are being exploited in every detail. We allow ourselves to be charged any price for what we have to purchase, and we have to sell at any price we can get, whereas we should be able to sell at **our** price. We do so in hatching eggs, why not in edible eggs? You will naturally answer, because of supply and demand, but even that can be controlled by storage.

To sum up my remarks. In my humble opinion, what is wanted is Co-operation such as Randolph Meech advocated in 1914. The Food Purchase Scheme is excellent, but I cannot see that it is going to cheapen food very much, though it would control the quality, and unless we can get a better price for our eggs there will be very few poultry farmers to purchase it.

A friend in South Africa sends me a paper cutting stating that twenty million eggs were shipped from there to England for the Christmas market. Is it any wonder our egg slumped? Profits here for the last four years show a decrease on turnover, even the sanguine Mr. Toovey will admit that.

I know the industry can be put on a firm commercial basis, the same as any other manufactured product—if we cannot find this elusive organiser sought for for eleven years in this country, why not look for him further afield?

My remarks in this letter are in no way a reflection on the present management of 'Eggs,' as I recognise it has done all that is possible for the industry.

Trusting I have not made too great an encroachment on your valuable space."

Yours faithfully,
EDMUND GILBERT, Lt.-Col.

With reference to what Colonel Gilbert has to say of what appeared in "Eggs" eleven years ago, it should be in the first place stated that this was before the days of the S.P.B.A., and referred to a little society which Mr. Randolph Meech had promoted in order to encourage intensive poultry-keeping. At that time the circulation of "Eggs" was counted in hundreds, now when we count it in its thousands it is a very different matter, and it would not be difficult for our readers to supply all the new-laid eggs wanted to fulfil any one order.

Would it not be wise if we were to let this question of Co-operation drop for a little while, or, at least, enquire what it really has to offer us? Is it to be a panacea for our present troubles? Would it do anything to increase the price of eggs? Could it, except in a few districts, do anything to find better markets? Is the Co-operative Movement at any time likely to be in a position to control the markets?

The question of grading has been frequently mentioned as something which the Co-operative Society should undertake. Our late President, Mr. P. L. Johnson, has often told us that he has sent his graded eggs into the market, and the same day the second grade eggs h realised a higher price than the first grade. C plaints reach us from all over the country where readers have attempted to grade egg order to secure higher prices, they have faile reap any benefit for their trouble.

It appears to us that our time might be far m profitably spent in investigating the cost of duction rather than looking solely to Co-opera methods as a solution. We have now proposals a new Society for the Co-operative Preservatio Eggs. What benefits are likely to arise from What is to prevent every man from preserving own eggs on his own farm? The cost of the p is in no way prohibitive, and he would possibly in a far better position to find a market for t and dispose of them more readily than could society formed for the specific purpose, and have already Co-operative Societies who prese millions of eggs yearly.

There is no doubt that we badly need a be system of marketing poultry produce in country, but we feel sure that if the indivi poultry farmer appreciates this he could effecti combine with two or three others in his dist and so successfully market his eggs in such q tities, and in such quality, that the costs woul the first case be reduced, and, in the second, m a greater appeal to the retailer and consume

As to the prices of foodstuffs quoted by Col Gilbert, there is indeed a vast difference now compared with then, but we must take the aver price of eggs, and not that at a particular peri we should also not lose sight of the fact that prices must be to a great extent influenced by prevailing trade depression. The S.P.B.A. making arrangements whereby a good laying m can be sold to its members, price £12 10s. ton, f.o.r., and the quality of the ingredients be guaranteed, and a breeders' mash will offered at £13 5s. An endeavour will be made supply it even cheaper than this, and also to sup chick feeds and mashes. The bulk food at £8 1 to which Colonel Gilbert referred, consisted dried vegetable matter—carrots, beet, cabba etc. As far as our memory serves, it was not unmixed success.

We feel that with co-operation nothing can done unless we have one National Society, and whole of the large producers unite in support it. At the present moment we have egg farm competing with each other, and there is c petition, too, with the Co-operative Societies, also compete with each other. In a certain trict one large firm are paying three differ prices for eggs to egg farmers in that district w whom they have contracts. Co-operation n help, but the really important thing at the mom is reduction of costs of production. As to organisation of the industry by the "elusive dividual" to whom Colonel Gilbert alludes, must remember that in the first place it would n a very big capital expenditure.

Modern Poultry Feeding.

By TOM NEWMAN.

THE VITAMIN MYSTERY.

Rats have solved the vitamin mystery, at least I ther so from the following cutting which has been it me by a correspondent :—

> ### SUNLIGHT IN FRUIT.
> ### RATS SOLVE VITAMIN MYSTERY.
>
> Remarkable experiments with rats, which threw a new light on the problem of vitamins, have been carried out at the Lister Institute.
>
> Six rats were placed in a dark room in a cage, and allowed to consume their full of boiled meat, bread and water. At the end of a week they were found to have lost half their weight. Three of the rats were then put in another cage, and given nothing but a small portion of an orange on which to sustain themselves, these three rats put on half the weight they had lost. The other three were given sunlight and a little orange, and within a week had regained their full normal weight.
>
> "Vitamins," said Dr. Hector Munro, a Harley Street specialist, who has been interested in the experiments, in an interview yesterday, "are nothing more or less than stored sunlight. Metabolism takes place in three stages—intake, repair, and elimination. Sixty per cent. of breakdowns in health are due to the retention in the system of waste products. Light energy meets this condition by stabilising the blood. The rays of light which are most valuable to health are those to the right of the spectrum, and it has been found that when these rays are excluded from an area in which a plant has been placed, the plant dies. These rays are caught and held by the fruits of the earth, and are the vitamins of which so much has been heard lately. Oranges and lemons contain a higher percentage of stored sunlight than any other fruits in the world."

Iy correspondent asks whether there is any benefit e derived from giving young chicks orange peel to k, and, presumably, this question is based on the ement of the Harley Street specialist, that oranges lemons contain more stored sunlight than any er fruits in the world; and now we have it definitely ed that vitamins are rays of lights caught and held he fruits of the earth. An American professor has ght and held a sufficient quantity from a ton of to exhibit in a glass bottle to some of his students ither are we wending? How is the vitamin A. ed in the liver of the cod and B. in yeast extracts? when vitamins are destroyed by cooking, is it really ed sunlight we are destroying?

the Harley Street specialist is correct in his very nite pronouncement that vitamins are stored sunt, what of our American professor, who extracted n from bran, and exhibited them in a bottle? To lay mind this is very puzzling, and presumably both these gentlemen have arrived at their results in the same manner—the process of elimination, or perhaps it would be wiser to say—entirely by the deductive method. Thus we can imagine the American professor, after chemically identifying all the known constituents in bran, bottling the unidentifiable residue and remarking: "These be vitamins," and Dr. Munro, finding the rats lost weight when given what was believed to be adequate food in the dark, and regaining it when given sunlight and orange, arriving at the conclusion that vitamins are stored sunlight. The problem is still further complicated by the fact that various authorities have told us that lemons contain no vitamin A., and oranges very little. Both are only fairly well supplied with B., and it is chiefly for the anti-scorbutic factor C. that we have been taught to value them. One really wonders where these experiments are trending. They begin by depriving an animal of some essential constituents in its ration. We may take as an example, feeding it entirely on polished rice. This produces a condition which we are told is due to lack of a certain vitamin. The patient is restored to health when this vitamin is supplied in the form of yeast extract (there surely can be no "stored sunlight" in yeast extract), but what we want to be perfectly sure about is that this condition is wholly and solely due to the lack of this single food constituent. In the case of these rats does boiled beef, bread and water constitute a complete ration? One would be inclined to say NO; but apart from all this we know, and have known for many years, that light is essential to health. We know that it acts as a stimulant. Would it not be interesting if this experiment was repeated in an artificially lighted room? It was generally observed last year that the sunless summer resulted in much slower development of the young stock.

The further the investigations take us the more confused we become on the subject of vitamins, and it would seem that if we are not careful that a disproportionate amount of importance will be attached to them—at any rate there seems no need at present to give oranges or lemons to our chicks.

MR. RENDEL'S EXPERIMENT.

It will be remembered that in our issue of March 11th I gave details of an experiment by Mr. Rendel, in which he stated that it occurred to him that hens might select for themselves a suitable ration, and he had measured quantities of bran, maize meal, meat and bone meal, ground oats and middlings, emptied into hoppers of a flock of 850 White Leghorn pullets, and then gave details of the amount consumed for nine days.

Mr. Rendel asked me to express an opinion, and I had stated that in the early days the pullets would eat what was most palatable as against what was most suitable for egg production.

He now writes to say that he had had to discontinue the experiment as production of eggs was so unsatisfactory that he could no longer continue. It is possible that had Mr. Rendel been able to carry on a little longer the birds would have balanced the ration themselves. There is always the fear that they may eat the more palatable in place of that which is more nourishing.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

M. E. R. (Newcastle-on-Tyne) writes:—"I am starting a hen farm. I have consulted books, but I am at a loss to know how to start. I have one or two hen houses, a chicken house, an incubator house, and a 250-egg incubator. I can safely say that at present I have room for 150 adult hens. Might I ask the following questions:—(1) What hours of the day do I feed them? (2) What do I feed them on? If anything else is necessary for their management, please tell me."—In the first place, I must inform her we can only reply to members of the S.P.B.A. by post, unless a fee of 2s. 6d. is paid, and she will be much wiser to join the Association, as she does not appear to have even a mere elementary knowledge of poultry. She should feed her hens in the following manner:—One small handful of grain in the litter between every five birds at 7.30 a.m.—earlier, if possible. At nine the dry mash hoppers should be opened. The mash should be made up of:—2lbs. bran, 4lbs. middlings, 2lbs. maize meal, and 1lb, meat and bone meal, or, if she can obtain it, half pound soya bean meal (extracted) and half pound meat and bone meal. This could be used either as a wet or dry mash. If dry it should be always before the birds. If wet they should be allowed $2\frac{1}{2}$ozs. of it per bird, weighed before cooking, and the bran should not be scalded but reserved to dry off the remainder of the ingredients with. As a last feed, about half-an-hour before they go to perch (time will, of course, vary with the season) they should have two ounces of grain per bird, given in the litter. I am sorry that I cannot, in these columns, enter into such a big subject as the management. It is a little too big to answer through the query columns.

F. R. L. (Newport) writes to ask whether cross-bred chicks are immune to B.W.D. In answer to this ques-
tion—this is certainly not the case, for during the
week we have had three cases amongst sex-lin
chicks reported. There is no reason to believe
cross-bred chicks are likely to be immune to
disease, or that they are likely to escape very lig
from its ravages. In answer to his further questio
to chicks being hatched in a very wet state in
incubator, the probability is that this result is du
bad ventilation. I think he made a bad mistak
stopping up the ventilation holes in his "Hears
machines for the first fortnight.

L. Q. A. writes:—"I notice you give soya bean
in many of your recipes. What exactly does
supply in the mash? Is it expensive? Does it
well, and where it is obtained, as the corn merch
here do not seem to know? I should want to bu
quantity to make it worth while to pay any carri
Will you also tell me what is actually "T. Newma
formula, which so many people advertise? May I
how I have enjoyed the odd copies of "Eggs" I
come across.—I am surprised that my corresponde
corn merchants have not heard of soya bean
Surely he, or they, must be a little behind the ti
as it is not by any means a new importation. In
to her question as to what exactly it does suppl
the mash, I may say that it is exceptionally ric
protein, of good value, and can be used as a subst
for half the meat and bone meal or fish meal.
not expensive, and should be procurable at about
6d. per cwt., but I cannot tell here where she
obtain it. It is advertised in our columns. Ye
does keep well. The formula to which she all
is:—1lb. bran, 1lb. Alfalfa meal, 4lbs. middlings,
S.G.O., 1lb. maize meal and 1lb. meat and bone
or fish meal; or she could substitute half soya
meal for either of the last two ingredients.

Mrs. R. (Forfar) sends me 12 eggs which have f
to hatch, and wishes to know the reason. Per
some of my readers will appreciate the difficulty
I describe these eggs. Two were infertile, in
the embryo had died before the seventh day, thr
the eighteenth day, the remaining four had almost
pletely absorbed the yolk, and had died in the
stage of incubation. My correspondent assures
that the incubator ran steadily throughout the
period. There was nothing abnormal with three o
four eggs which had run nearly the whole period
in one the membrane was hard and dry, and the
very small, which indicates a stale egg. I thin
bad hatch was entirely due to the eggs themse
that the embryos had not sufficient vitality to h
At least 70 per cent. of the eggs which are sen
may be described as unhatchable.

E. V. G. (Bristol) asks if it correct to say
chickens "sweat." No, E. V. G., it is not co
although I often use the expression myself. The
contains no glands, and the moisture which cause
condition we call "sweating," is given off by
breath when they are confined in very close qua
In answer to his second question, I should al
prefer a well-matured cockerel to mate to pullets

nd season male; in any case you cannot compen- for immaturity on the part of the pullets, and ature pullets should never be mated.

'Subscriber'' wishes to know if the capsule uld regulate the heat inside the incubator with- his shifting the rod to keep the temperature n. If the regulator is properly adjusted, the sule should do all that is necessary without erference, except occasionally moving the weight the rod. Yes, the egg drawer should still hold own, even if the room temperature varied from to 80, but he is using a very cheap incubator, of course anything might happen with this. regard to his second question. Yes, a metal ubator would give quite as good results as the oden one.

M. B. (Andover) sends me a sample of chick d. He began hatching in December, and up a week ago fed on a chick feed according to formula given in the Register of the S.P.B.A. ding, however, that as his chicks increased too ch time was spent in kibbling the wheat and eco, he reverted to a chick feed, sample of ich he sends. He has fed it to four different s of chicks, approximately three—one week old one lot from the beginning. In the first three es the chicks are progressing normally, but in case of the last lot, which he started from beginning on this, about 40 per cent. of the cks have suffered from some bowel complaint, ich seems in the first instance to give diarrhoea. e chicks are now a week old. Although there e been no deaths, he has killed three or four of worst and made a post-mortem. He asks, m my examination of the sample, do I consider would be conducive to bowel disorders in very ng chicks? Also, do I think it would be safe feed to chicks a week or fortnight old? If I k it is injurious, he wants to know, so that he go back to the old formula. I have carefully mined the sample sent. It consists of maize, it groats, cracked wheat, and canary seed, also ittle rice. I can see nothing in it which would any way account for the condition of the chicks. is a nice clean sample. There is just the pos- ility, if this food were given exclusively during first week, its starchy nature might cause con- pation and diarrhoea would follow, but I think s would be avoided if there was broad bran ays before the chicks, and if you were to give little finely chopped green food, particularly ons. He sends other samples, including a very od sample of bran; thirds, although good value the money, contain rather a high percentage bran; middlings, at £13 5s., which are good, as y should be at such a price; and S.G..O., which only moderate; also maize meal, to which the me remark applies. The alfalfa he sends con- ns too much stalk, but the price is fair.

Angora Wool Farming.

By LADY RACHEL BYNG.

A NEW AND MONEY-MAKING ENGLISH INDUSTRY, FOR WHICH THERE IS AN EVER-WAITING MARKET.

Angora Rabbit Wool growing is still in its infancy in England, but for many years it has been a great source of income to the Frenchman, and English spinners have sent out large sums of money to France in order to procure the wool which England has only just begun to grow. The demand is much greater than the supply, and the English Angoras yield a wool which is much coveted by the English spinners.

For many years Angoras have been kept in a small way as a hobby for exhibition purposes, hence their wool has been developed to great perfection, and it is quite easy for a "would-be" wool farmer to start straight away with the very best stock for wool-producing.

Apprentices on Lady Rachel Byng's Farm in Northumberland plucking Angora Wool, for which there is a waiting market at 35/- a lb.

One of the many great attractions of this new industry is that it requires far less capital and space than poultry or other farming.

When one realises that one buck and two does, old enough to breed from, of the very best strain, can be procured for from £10 to £12, and that each of these does can have, in all probability, 20 wiry babies during the year, it is easily understood that a substantial start is made in one year towards a large rabbitry.

Angoras can be bred from at six months of age. If one-third only of the litters were does—say 12—and four of those born in the two first litters—by the end of the first year, with only ordinary luck, there should be at least 20 grandchildren as well as the 40 children.

It will be seen that stock is provided on a rabbit farm far more quickly than is possible on a poultry farm. If one does not wish to invest in enough hutches to house all the babies, it is a wise plan to sell off all bucks as soon as weaned. By so doing one should have paid back the capital invested in stock and hutches.

The cost of hutches should not exceed a few shillings each if home-made.

Excellent packing cases can be had for the asking—or for a shilling or two from tobacconists or grocers—about 2 ft. 6 in. by 2 ft. by 2 ft.

Tea boxes make quite good single hutches to start with, and pack neatly one on top of the other in tiers. Lay the box on one side and make a square frame to fit exactly within the openings—two hinges and a button, and a piece of 1 inch wire netting stretched across frame and the hutch is complete.

The hutches can be stacked in any outbuilding, lean-to shed, loft, or unused stables.

The building must be well ventilated, dry and draught-proof. Angoras are very hardy. They do not mind cold, but they should not be in direct contact with wind, snow or rain.

If kept completely out in the open, it is imperative to house them in really well-made, draught-proof and weather-proof hutches, with a closed-in sleeping compartment.

GLOUCESTERSHIRE EGG-LAYING TEST.

The following is the report on Gloucestershire Laying Test (under the supervision of Mr. L. G. Price County Instructor in Poultry Keeping) for the fifth month ended February 27th.

In spite of the abnormally wet weather which continued throughout the greater part of the month, 5,336 eggs have been collected against 4,658 the previous month, giving a total of 20,457 for the five months, and an average of 64.1 in respect of the 319 pullets entered. Mrs. Hanks' K.-C. in the single duck section is still worthy of notice, having now laid a sequence of 136 first-grade eggs. Maisemore School still leads for all breeds. The general health of the stock is good.

Section A. (1). White Wyandotte (Professional). Five birds constitute a pen).—P. M. Hinton, 1909 pts.; H. Bennett, 1676; H. Ludlow Hewitt, 1646; H. T. Goodber, 1556; F. W. Clifford, 1551; H. W. Fowles, 1510.

Section A. (2). A.O.V. Heavy Breed (Professional).—W. R. Partridge (R.I.R.), 2067 pts.; G. H. H. Simmons (L.S.), 1933; J. G. Herbert (R.I.R.), 1783; Miss M. Lawrence (R.I.R.), 1767; M. C. Beale (R.I.R.), 1704; Coaley P.F., Ltd. (R.I.R.), 1444.

Section A. (3). A.V. Light Breed (Professional). — Miss N. Townsend, 1828; Miss H. Baylis, 1810; F. A. Welch, 1740; Sherborne Park P.F., 1683; Cotswold Ped. Farm. 1571; G. H. H. Simmons, 1556.

Section B. (1). A.V. Heavy Breed. (Confined to owners of not more than 50 laying head).—Maisemore School (W.W.), 2100; A. W. Moses (L.S.), 1952; Miss M. Brown (W.W.), 1610; L. Grist (W.W.), 1393; R. T. Miles (B'Veld), 705.

Section B. (2). A.V. Light Breed. (Confined to owners of not more than 50 laying head).—C. E. Skirton, 1644 pts.; L. Grist, 1346; Miss M. Brown, 1183; J. D. Crewdson, 1109. All White Leghorns.

Pen Duck Section. (Four ducks constitute a pen).—G. H. H. Simmons (K.-C.), 319 pts.; S. J. Phillips (K.-C.), 226; W. R. Partridge (W.R.), 216; Miss N. Townsend (K.-C.), 212; G. B. Young (K.-C.), 209; Major J. G. Dugdale (K.-C.), 195.

SINGLE PEN SECTION.

Section 1. White Leghorns.—L. Grist (6), 463 pts.; Miss K. Feaviour, 435; Miss N. Townsend (5), 429; G. H. H. Simmons, 404; D. Japp, 392; L. Grist (13), 379.

Section 2. White Wyandotte.—Philip Clapham (36), 481 pts.; G. H. H. Simmons. 480; H. W. Fowles, 480; W. R. Partridge (38), 477; W. R. Partridge (34), 476; Lord Sherborne (39), 468.

Section 3. Rhode Island Red.—Miss M. Lawrence (59), 434 pts.; G. B. Metcalfe, 421; Miss M. Lawrence (42), 305; W. R. Partridge, 273; S. Barnes, jun. (48), 266; A. Daunton, 182.

Section 4. A.O.V. Light Breed.—Churchdown P.F. (An.), 434 pts.; Miss M. Johnson (W. La. B.), 211; G. B. Young (B.L.), 195; H. W. Stephens (B.L.), 192; Churchdown P.F. (B.L.), 158; Miss K. Feaviour (B.L.), 99.

Section 5. A.O.V. Heavy Breed.—G. H. H. Simmons (Buff R.), 472 pts.; Miss M. Lawrence (Buff R.), 458; Mrs. E. Weinholt (Aus. Orp.), 415; Miss M. Johnson (L.S.), 396; Lady Bledisloe (Aus. Orp.), 362; Major J. G. Dugdale (L.S., 58), 323.

Section 6. Ducks.—Mrs. H. L. Hanks (K.-C.), 136 test score; H. W. Fowles (K.-C.), 112; Miss N. Townsend (12) (K.C.), 91; F. L. Walters (7) (W.R.), 88; F. L. Walters (6) (W.R.), 87; Mrs. W. Pearce Ellis (K.-C), 79.

"MOBBED BY CUSTOMERS."

YOUNG LADY POULTRY FARMER'S CLAIM AT CONSET

An action for breach of warranty in respect of t sale of eggs, and also for loss of goodwill, was broug at Consett County Court, by Miss Quick, of Hexha against Mr. Gordon, of the Coppy Poultry Farm, ne Beamish

Mr. Archibald Wilson, Newcastle, was for the plai tiff, and Mr. C. B. Fenwick for the defendant.

The claim was for £100, made up of £11 5s. for 1 dozen eggs at 2s. 3d. per dozen; loss of profits (£3 f 13 weeks), £39; and damage to goodwill, £49 15s.

Mr. Wilson said that his client was a young la who set up in business as a poultry farmer in 1922 a spent some £300. She had the assistance of a you lady named Murray, who sold produce for her.

The business was first of all carried on at Hexha but in July, 1924, it was extended to Morpeth.

Towards the end of August, 1924, Miss Quick's he were not laying very well, and she saw an adverti ment offering for sale new-laid eggs, application to made to defendant at the Coppy Poultry Far Beamish.

Plaintiff got into correspondence with defenda who offered 100 to 200 dozen eggs at 2s. per dozen.

Miss Quick and Miss Murray visited Beamish, a purchased 100 dozen eggs at 2s. 2d. per dozen. Mi Quick explained why the eggs were required, a impressed upon Gordon that the eggs were for re-sa to her regular customers.

There were one or two bad eggs among the consig ment, but they were satisfactory.

"BUSINESS PRACTICALLY RUINED."

On September 29th plaintiff visited Beamish agai and purchased 100 dozen eggs at 2s. 3d. per doze which were conveyed to her home on her van. Pa of the eggs were sold at Hexham, and the other pa at Morpeth at 2s. 8d. per dozen.

When Miss Quick visited Morpeth market the f lowing week, she was practically mobbed by her cu tomers, who complained that the eggs sold were rotte and plaintiff had to refund the money or give fre eggs in place of the others.

The same thing happened when Miss Murray we to Hexham market the next week. The result w that the business of Miss Quick had been practica ruined.

Plaintiff said that since the sale of the eggs she h been unable to sell anything at either Hexham Morpeth markets. She took geese, turkeys, etc., Morpeth at Christmas, but was unable to sell an thing, and had to bring them home.

She had to sell her hens, for which she paid 12s. 6 each, as "boilers." Her profits previous to Octob last were about £4 or £5 a week.

Judge Moore: Are you still carrying on business?

Plaintiff: I have no poultry. I hope to start agai but at present I have no money.

His Honour said he would like to look into cas bearing upon the point before giving his decision. I would reserve judgment.

SEVEN GRADES OF EGGS.

Mr. Matthew Fraser, of Gosforth, called for the fence, is County representative upon the National ultry Council, and until recently was adviser to the itional Utility Poultry Society.

He said there were seven grades of egg—the strictly sh, which could be marketed up to 48 hours; the sh, up to 10 days; the new-laid, up to three weeks; d then eggs of all kinds.

Mr. Archibald Wilson: Including the mate's egg. aughter).

Witness (proceeding): Chicks, eggs that are cracked dirty, spots, with blood spots on; and rocks, which generally used as election eggs. (Loud laughter). If eggs were properly stored, he added, they could be rrectly described as new-laid eggs up to three weeks. ey must be turned three or four times during the riod if sold as new-laid.

MALPAS UTILITY POULTRY CLUB'S TWELVE MONTHS' LAYING TRIALS.

Fourth Report.

All sections are now laying well. the light breeds coming on l, especially towards the end of the month. We have to ort four deaths during this period, three being due to peri- itis caused by rupture of an egg in the oviduct, and one due liver trouble.

ARTHUR WHITE.

EGG PRODUCTION OF LEADING BIRDS.

igures are Eggs for the month, and total to date respectively.

White Leghorns.—Mr. Warwick Roger, 20, 85; Mr. W. Measures, 69; Mr. H. Smith, 13, 67; Mr .W. Measures, 18, 65; Mr. H. Baylis, 63; Mr. C. L. Crosse, 4, 58.

A.O.V. Light.—Mr. William Taylor, 15, 72; Mr. O. Rawlinson, 72; Mr. W. Crump, 20, 71; Mr. P. E. White, 15, 68; Mr. J. R. nes, 13, 65; Mr. C. Mallon, 18, 64.

White Wyandottes.—Mr. G. Walley, 20, 89; Mr. J. Richardson, 84; Mr. and Mrs. G. H. Done, 26, 83; Mr. S. Howell, 17, 76; Mr. Howell, 18, 75; Mr. E. J. Stone, 12, 75.

A.O.V. Heavy.—Mr. R. Howard, 21, 91; Langford Poultry Farm, 86; Mr. H. Harold Lloyd, 5, 73; Mr. W. H. Robinson, 20, 69; A. P. Willis, 14, 69; Mr. W. Measures, 15, 69.

ARROW-IN-FURNESS AND DISTRICT UTILITY POULTRY SOCIETY EGG-LAYING COMPETITION.

The twenty weeks laying test organised by the above society s now terminated ,and on the whole has been very successful. e average number of eggs per bird would have been much gher had it not been for several immature birds being entered, ne of which never laid an egg and others started very late. e health of the stock has been exceedingly good throughout e period of the test and only two have been broody. The ndard set was very high, requiring a 2oz. egg from the start count as first grade, 1½oz. and over second grade, under 1½oz. l not score. There have only been five under-sized eggs alto- her. The test has been under the management of Mr. G. B. otall, Thorncliffe Poultry Farm, which is an ideal place for e purpose, and thoroughly up-to-date. The small breeders' sses were poorly supported, but, as it was the first year for se classes, it is hoped for more support next time. Certificate nners for the final period of four weeks:—

Open Class.—Section 1, Mr. Myles Newton; section 2, Mr. J. ldesley; section 3, Mr. George Mills; section 4, Hon. M. Cross. all breeders (owning not more than 50 pullets): Section 1, Mr. Graham; section 2, Mr. J. J. Hardy; section 3, Mr. George lls; section 4, Mr. Wm. Atkinson.

Winners over the full 20 weeks.—Open Class.—Section 1; 1, arles Atkinson, Urswick, 782 pts.; 2, Hon. M. Cross, Ash House, oughton-in-Furness, 758; 3, Miss Mary Newton, Ruskin Mount, llom. 706. Section 2: 1, Mr. J. Tyldesley, 16, Avon Street, Wal- , 876; 2, Mr. Wm. Hatton, Birkrigg View, Urswick, 730; 3, . A. Fawcett, 29, Dudley Street, Barrow. 660. Section 3: 1, Hon. Cross, 882; 2, Mr. G. E. Duff, Greenodd, 690; 3, Messrs. T. H. rker, Baines Paddock Poultry Farm, 688. Section 4: 1, Hon. Cross, 690; 2, Mr. W. Fielding, Bay View, Flookburgh, 520; 3, . Myles Newton, Newland, Ulverston, 488.

Small Breeders' Class.—Section 1: 1, Mr. George Waite, 97, ford Street, Barrow, 506; 2, J. Graham, 10, Romney Road, rrow, 132. Section 2: 1, Mr. J. J. Hardy, 16, Leicester Street, ; 2, Mr. Robert Atkinson, The Retreat, Kirkby-in-Furness, 210. tion 3: 1, Mr. George Mills, The Chaet, Foxfield, 544; 2, Mr. bert Atkinson, 520; 3, M. Robert Atkinson, 498.

The G. B. Tootall challenge cup and the society's silver medal champion bird over all sections: Hon. M. Cross, Ash House ght Sussex). Champion over all sections, small breeders: Mr. . Mills, Foxfield (Rhode Island Red).

J. GRAHAM, Secretary.

The Internal Mechanism of the Egg-Laying Machine.

By **J. L. ROSEDALE.**

VI.—" KEEPING THE BALL ROLLING."

We now come to what must always be the most interesting part of a scientific discussion—namely, the practical application. It is always a drawback to the practical farmer to have this part of the subject dealt with by a scientific investigator. However, I have done my best to mitigate this disadvantage by going into practice myself, with the object of testing and checking results obtained in the laboratory. I may say that I have not yet found that science has let me down, and I believe that the difficulty which is sometimes imagined regarding the combination of science and practice is generally due to an insufficient acquaintance of the former than a lack of experience with the latter.

It must be remembered, however, that we are only at the beginning of our permanent knowledge and not at the end. This places to-night's discussion under a great disadvantage, because as years go on no doubt certain modifications will be made, not, I think, in the fundaments of the subject, but in a few of the details. For instance, we know that somewhere around 10 per cent. of protein gives a " productive " allowance, and we also know that high protein assists production. We know, too, that protein is expensive. We do not yet know the most economical percentage to feed, taking both profits and production into consideration, whether it is 10, 11½, 13¾ or 15 per cent., etc. Some day, too, we shall know more about vitamins, salts and sunlight (and night lights too!), so that at present we can only turn to account the experience already gained.

One of the articles in our interesting " Year Book " deals with " Circumstances." Those who have read it will agree that before we can usefully discuss our subject to-night we must state our own circumstances, which will have some bearing upon our choice of foods and methods of feeding. In the first place I am going to assume that we are " small " poultry-keepers, who have to buy in hundredweight lots, and that we cannot store huge quantities of food, but must be buffeted about by the monthly changes in food prices. We have neither the time nor skill for speculation at Mark Lane! Secondly, we can afford no food costing more than 20s. a cwt., however little of it we need to use at a time. In this connection we can frequently make use of the discount system and food purchase scheme that our Association provides for us. Again, costs of delivery must be considered.

If a merchant in Newcastle can sell at 2s. less than the local man the railway will pocket the difference! It very rarely pays to have food sent by rail when there is any dealer locally who will deliver to the door.

We must, then, content ourselves with obtaining a price list from those merchants from whom we are likely to buy, and turn to page 103 of our Year Book for a good average analysis of the foods we propose to use. We can also get samples. When buying my protein concentrate, such as fish or meat meal, I am a little more particular. I not only get a sample, but I ask for a full analysis not merely of the percentage of albuminoids, oil and salt, but details of the ash, how much calcium phosphates, sand, etc. If I fail to get these I never buy that meal, and I think you will see why later on.

In looking through our price lists our interest turns naturally and rightly to the cheapest foods on the list. Here then we have an example where poultry-keepers should keep close to "Nature!"

Suppose our requirements to be about 10 per cent. protein, 3 or 4 per cent. ash, together with a sufficient carbohydrate and vitamin supply to furnish energy and to balance the diet. We will at once inspect our price lists and the analysis of the foods.

We have one or two determinations to make concerning our way of feeding carbohydrate. We can supply it in the form of grain or offals or other cereal products, and you can either mix it all as mash or else retain some (if it is grain), to be fed under the popular name of "scratch grain." I would, however, utter a word of warning in this connection. If you decide to feed scratch grain consider it as forming part of the carbohydrate of the whole ration, for such it most certainly is. If you go and balance a mash ever so perfectly and then add excess carbohydrate in the form of grain, you only reduce the proportion of protein and ash of your ration, and so your birds do not get the amount of these productive substances that you are pretending to give them. The right thing to do is to take your whole ration into consideration in forming the diet, and then you will keep a proper balance.

Birds like grain. It is not necessary to feed grain as such. Ground cereal will provide carbohydrate just as well. It is, however, customary to feed a certain amount of unground grains, as, with the exception of offals, it is generally cheaper, and it is also possible to have a lower fibre content and therefore more actual food than we get with offals.

TABLE I.

PERCENTAGE ANALYSES OF FOODS.

	Protein.	Carbo-hydrate.	Fat.	Ash.	Fibre.	Wate
Bran	14.8	54.9	3.8	5.8	8.1	12.
Middlings	15.6	60.4	4.0	3.3	4.6	12
Fish Meal	58.0	—	4.5	21.0	—	10.
Meat Meal	72.0	—	13.2	3.8	—	11
Meat and Bone Meal	40.25	—	10.7	40.8	—	8
Dried Yeast	48.5	35.5	0.5	10.7	—	4.
Alfalfa Meal	14.3	42.7	2.2	7.4	25.0	8
Barley Meal	8.6	67.9	1.5	2.6	4.5	15
Maize Gluten Feed	23.5	56.7	3.4	2.5	3.5	10
Dari	9.6	71.2	3.8	2.4	1.9	11
Maize	9.2	68.0	5.1	1.4	2.6	13
Oats	11.5	58 5	5.2	3.0	9.7	12
Wheat	12.5	67.7	1.7	1.8	2.4	13
Dried Skim Milk	31.8	43.4	0.2	7.6	—	12
Soya Bean Meal	44.7	31.9	1.5	5.5	5.1	11

TABLE II.

MINERAL ANALYSES PER 100 PARTS OF DRY SUBSTANCE.

	Potash.	Soda.	Lime.	Magnesia.	Iron.	Sulphate.	Phosphate.	
Bran	16.2	2.4	0.9	7.3	0.34	6.7	29.5	0
Middlings	11.8	1.4	0.8	5.8	—	5.8	21.1	0
Dried Yeast	—	—	traces	—	—	—	—	
Alfalfa Meal	22.2	5.6	19.5	5.9	1.68	7.8	5.4	4
Maize Gluten Feed	2 3	5.7	3.5	3.6	—	14.6	6.2	0
Maize	4.0	0.4	0.2	1.8	0.11	3.8	6.9	0
Oats	5.6	2.3	1.4	2.0	0.38	4 9	8.1	0
Wheat	5.3	1.6	0.6	2.2	0.23	6.4	8.6	0
Dried Skim Milk	1.7	0.6	1.8	0.2	—	0.8	2.2	0
Soya Bean	24.7	6.1	2.9	3.8	—	10.3	13.7	0

TABLE III.

REPRESENTATIVE PRICES PER CWT.

	June.	July.	Oct.	Jan
Bran	8/0	8/0	9/0	10/0
Middlings	10/0	10/6	11/3	11/0
Fish Meal	20/0	20/0	20/0	21/9
Meat Meal	20/0	20/0	20/0	20/6
Meat and Bone Meal	17/6	17/6	17/6	17/6
Dried Yeast	20/6	20/6	20/6	23/0
Alfalfa Meal	16/0	16/0	15/6	15/0
Barley Meal	12/6	13/0	14/0	14/0
Maize Gluten Feed	9/6	9/6	12/6	12/6
Dari	10/6	11/0	13/6	13/3
Maize	12/0	11/6	10/6	12/3
Oats	10/6	11/3	13/6	14/3
Wheat	13/3	13/3	14/3	15/3
Dried Skim Milk	—	—	52/6	52/6
Soya Bean Meal	13/6	13/6	13/0	13/0

(To be Continued.)

WARE AND DISTRICT UTILITY POULTRY CLUB.

THIRD ANNUAL OPEN EGG SHOW. "The Egg Classic."

The above club held its third annual open egg show on Mar 5th, and again proved a great success. Entries, which were we ahead of the previous year's shows. both in number and qualit came from all parts of the British Isles, which point to the fa that poultry-keepers who are out for the large egg apprecia the chance of exhibiting their produce, and all classes excepti ducks were well filled. The exhibits were fairly staged on unifor plates covered with black crepe paper covers, which showed the exhibits to advantage, and minimised all doubts as to tint which were adjusted in their respective classes. The judgin was carried out most efficiently by the Club's President, Powell Owen, Esq., who had by no means an easy or enviab task. Judging finished, in addition to prize cards, a card w supplied to each exhibit, showing the owner, breed, award, a reserve price of the exhibit, for the benefit of those present a exhibitors. Special mention should be made of the high-gra bantam eggs.

A splendid novel feature this year was an exhibition of Breeding Trios for Educational Ideas, and these were the subje of a lecture and demonstration by Mr. Powell Owen, who dea with the adaptability and breed characteristics of the vario breeds in a very thorough manner to the appreciation of everyo present, and a most enjoyable day was closed by the dispos of the exhibits, which were kindly placed for the club's benefit

May I take advantage of your columns to thank your reade for their co-operation and support which made this show such brilliant success, and to compliment them on their exhibits.

J. F BURNETT, Hon. Sec

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

COUNCIL MEETING.

The monthly meeting of the Council was held at the
emorial Hall, Farringdon Street, on Wednesday,
arch 11th, 1925.

Present:—Mrs. C. H. Hunter (President, in the
air), Miss Maddison, Messrs. J. G. Kitson, J. Smart,
J. Meekings, P. Hedworth Foulkes, E. Bostock
nith, A. H. Paine, R. Fletcher Hearnshaw, and J.
. Dowden, the Treasurer and Secretary.

A letter of apology was read from Mr. F. W. Wait,
gretting his inability to attend the meeting.

Minutes of the previous meeting were read, confirmed
d signed.

Secretary's Report.—The Secretary reported that
1 new members had been elected during the month
February. This was one less than in the correspond-
g period of last year.

During the month he had visited the Gloucester
anch, and lectured there in the afternoon and even-
g. The meeting had been very successful, and the
anch was doing excellent work. An application had
en received from the committee for a cup to be
ered to S.P.B.A. members competing in the
oucestershire Laying Test. Mr. R. Fletcher Hearn-
aw proposed, and Mr. A. H. Paine seconded, that a
allenge cup be offered to S.P.B.A. members only
the best winter record made in the test, the cup
be won three times to become the absolute property
the competitor. This was agreed to.

The Secretary stated that he had also visited Altrin-
am, Wimborne, Sturminster-Marshall, and the
etings had been very successful.

Treasurer's Report.—The Treasurer's report was
mitted, approved and adopted. Instructions were
en for accounts in connection with the Wellingham
periments to be paid.

"Eggs" Committee.—The Chairman of the "Eggs"
mmittee, Mr. J. G. Kitson, informed the meeting
at he had the usual satisfactory report to make.

Food Purchase Scheme.—The Secretary reported
at a lot of interest had been aroused in connection
th the Food Purchase Scheme, but he felt that those
o should take advantage of the scheme had, to some
tent, failed to do so. It was more likely to benefit
se who were compelled to buy in comparatively
all quantities, than those who were able to take
o or four ton lots for their own consumption.
rangements had been made with one large firm to
ply a laying mash and also a breeder's mash at
2 10s. and £13 5s. respectively. He hoped to make
angements for these to be supplied to members in
all lots of five cwt. He hoped to be in a position to
ort further at the next meeting of the Council, as
y had still other firms to interview.

Mr. J. G. Kitson read a letter which he had received from Mr. P. C. Campbell, suggesting that breeding pens registered in the S.P.B.A. Year Book should be blood tested. After an interesting discussion it was generally felt that the Council had no power to endorse such a resolution, and it was agreed that Mr. Campbell should be written to and advised to bring it forward at the Annual General Meeting of the Association.

The Secretary raised the question as to whether the Council or members were prepared to support the Sale of Eggs by weight. A long discussion took place, various opinions being expressed, but the general feeling of the meeting was that it would not be advantageous to the industry. Therefore, the Council was not prepared to move such a resolution at the meeting of the National Poultry Council.

The next meeting of the Council was fixed for Wednesday, 8th April.

THE NORWICH CIRCLE.

On Saturday, 14th March, I visited Norwich, and lectured to the Norwich Poultry Circle on "Foods and Feeding." The Honourable Florence Amherst presided over a very large attendance of members.

The Circle is doing splendid work in the county, and I found my audience very keen and interested. I hear that there is a steady development of the Poultry Industry in Norfolk, there being many more poultry farmers than was the case a few years ago.

Numerous questions were asked at the close of the meeting, and, of course, the everlasting problem of dry v. wet mash feeding turned up. One questioner stated that on dry mash his birds, after laying well for some months, had dropped back. On being given wet mash they had resumed laying, and laid well for the rest of the year. This was promptly countered by Dr. Spurrell, who informed the audience that his flock of 140 Leghorns had averaged over 200 eggs per bird for the year, and had been reared and fed entirely on my dry mash formulas. However, I do not wish to be involved in any controversy on this subject, which will never be settled to everyone's satisfaction. Last week, at the Council meeting, Mr. Foulkes showed me the results on dry v. wet mash feeding in the Australian Laying Test, and the "dry mashers" had considerably the better record; but, as I have said so frequently, given two careful feeders, one on wet and the other on dry, with the same stock, there will be no difference in the results.

LANCASHIRE AND DISTRICT BRANCH.

The March Monthly Lecture of the above Branch was held in the "Common Hall," 3, Hackin's Hey, Liverpool, on Wednesday, 11th March, 1925, at 7.30 p.m., when Mr F. Walsh, of the Glen Poultry Farm, Hoghton, near Preston, gave an instructive and interesting paper on "Chicken Rearing." He also informed the audience of how to select eggs for incubation. A hearty vote of thanks was moved by Mr. B. O. Crosthwaite, and seconded by Mr. Robert Thomas, and carried unanimously. Attendance: 54 members and friends.

Egg Show. List of Awards:—1st prize, four commercial eggs (white): Mrs. Thompson. 1st prize, four commercial eggs (brown): Mr. M. Robertson, 1st prize, four commercial eggs (tinted): Mr. Robt. Thomas. 1st prize, six hatching eggs (brown or tinted): Mrs. Kendall. 1st prize, six hatching eggs (white): Mrs. Thompson. Judge: Mr. F. Walsh.

At the above lecture it was proposed that the Hon. Sec. should fix up an excursion by char-a-banc on Easter Monday to the principal poultry farms in the Preston district. Any member or friend not at the lecture, who would like to join same, please let the Hon. Sec. know at once.

R. J. THOMAS, Hon. Sec.
9, Grey Road, Walton, Liverpool.

AN AMERICAN VIEW OF HANDLING.

I take the following from the "American Poultry Advocate" and the "American Poultry Journal." Handling has probably been more keenly studied in America than in this country, and for a longer period. Now some of the greatest experts are beginning to speak doubtfully of its value. I do not think there is any doubt as to its value, IF, and it is a big "IF," we were to recognise its limitations. Dr. Heaseley's remark that "the system seemed to fail to check up with the work of the trap-nesters," is profoundly true. What is most disturbing to my mind is the appraisement of the value of a breeding cockerel by this system. One can fairly easily say that a particular bird is not likely to breed good stock, but to say that another will do, because he possesses certain characteristics, is going too far.

> Dr. Prince T. Woods takes decided issue with Mr. Turner of the North American Egg Laying Contest, who stated that heavy laying hens are under-weight hens. Dr. Woods says: "I have not yet found any distinct egg type. The heavy layers come in many shapes and sizes, small and large, heavy, medium and light weight." Then he adds: "Nearly all of the tests, however, of selecting heavy layers, taken in their entirety, possess some merit. None of them are as accurate and reliable as their sponsors claim. Some of the indications claimed are simply absurd. I don't believe that a positive production type can be demonstrated by external characteristics, measurements, or manual examinations. The thing is anatomically, physiologically and biologically an absurdity."
>
> He then quotes from A. O. Schilling who was talking to a judge of the Production class, and who had remarked that he, himself, was not satisfied that he had been able to pick the best producers by external characteristics, and quotes Mr. Schilling as saying: "This man has had years of experience in breeding and judging cattle, horses and hogs, and he positively knows that high production is a matter of genetics and cannot be positively identified by external body conformation or anatomy." It has always seemed to me a strange thing that college professors can read books on biology, Mendelism, and learned treaties on "inheritance of fecundity in fowls," and then go out and by the laying on of hands indicate to the trusting public which are the best birds breed from to get good production stock.

* * * * *

At the recent Coliseum show in Chicago the was a large production class. Commenting on t class, the eminent Leghorn authority, Dr. L. Heasley, said: "Our present method of judgi production classes by physical characteristics not satisfactory to either the winners or the lose This is no criticism of the judge personally, b rather a dissatisfaction with the system itself. course, the winners were pleased with the blu they won, but were troubled that they were unab to feel that they knew why a certain bird won."

He refers to the fact that Hollywood Farr exhibited some of their high record birds, getti no prizes above a fifth, and Dr. Heasley adds: " male who had produced several 300-egg hens c be penalised and left out of the class if some oth male should show a trifle better body measu ment and certain preferred characteristics, ev though the latter's daughters might show und trap-nest to be indifferent layers. The syste seemed to fail to check up with the work of t trap-nesters."

It may be surprising that the well-known p duction birds of Hollywood Farms did not pla better than fifth, but to me it is even more remar able that their owner should ship these birds on Chicago to be felt of, looked at and adjudg according to a system with which he was n familiar. And speaking of systems and judges, wonder how many judges' systems would agre one with the other, and how many competent p duction judges there are in this country. Certain not many besides that good old production Judg T. Rapp Nest.

EAST ANGLIAN LAYING TEST.

Report of Fourth Month from 8th January to 4th February, 1

During the twenty-eight days comprising the fourth mon of the test, the number of eggs recorded was 2,786—being increase over the third month of 603. This increase is m satisfactory, for the weather throughout the period was very and cold, and high winds were experienced on many days.

The percentage of first-grade eggs rose from 62.4 to 81.4, a is explained by the increased production of the birds which ha now passed through the moult, and the attainment of the fi grade egg by many pullets which made a late start.

The total number of eggs laid to date is 7,718.

The best score by any pen during the month was 99, General R. L. Mullens' White Wyandottes, which were clos followed by four pens in Section 4, which each recorded over eggs. Mr. T. H. Sochon's pen of R.I.R.'s, which now consists only four birds, put up the fine score of 92 first-grade eggs.

The highest individual score was 28 by a R.I.R. in Section owned by Mr. and Mrs. T. J. McMillan.

The health of the flock continues to be excellent.

W. T. WILLIAMS, Hon. Secretary.

Figures are Eggs and Points to date respectively:—

Section 1. White Leghorns.—Dale Egg Farm, 269, 260; Al Bros., 227, 192; Capt. E. A. Wheeler, 192, 189.

Section 2. Any Other Non-Sitting Breed.—Miss E. Cavana (Ancona), 232, 232; Major R. Lloyd-George (Ancona), 187, 181; R. Berry (Sicilian Floods), 73, 73.

Section 3. White Wyandottes.—General R. L. Mullens, C. 268, 257; Mrs. Pierce-Grove, 253 ,253; Misses D. and M. Kee 232, 231.

Section 4. Rhode Island Red.—H. Turner, 371, 371; E. Fear 314, 253; Hasler and Co., Ltd., 292, 218.

Section 5. Any Other Sitting Breed.—Miss D. and M. Ke (L.S.), 259, 249; T. H. Sochon (L.S.), 243, 243; F. D. Montgome (Buff Rocks), 72, 72.

Section 6. Single Bird, Any Variety Light Breed.—W. S. L (W.L.), 79, 79; F. C. Tomlinson (W.L.), 72, 72; Miss P. Abercom (W.L.), 68, 68.

Section 7. Single Bird, Any Variety, Heavy Breed.—Gree ward Poultry Farm (W.W.), 66, 66; E. Fearon (R.I.R.), 64, 61; M Pierce-Grove (W.W.), 52, 52.

Note.—Five pullets in Section 1-5, and one pullet in Sections constitute a pen.

ANSWERS TO QUERIES—Continued.

: H. D. (Ashford Hill) sends two eggs taken n a 200-egg "Triumph" incubator, and asks can give him any explanation as to why they ıld not hatch. One was rather badly smashed spite of careful packing. It is rarely that eggs ie through the post without being smashed. In case of the White Leghorn, it would appear me that more ventilation was necessary during last few days of incubation. The Wyandotte was in such a state that it would hardly be sible to express an opinion. Death here took ce about the 18th day, and the membrane aprs very moist. Two eggs are not a sufficient nber to send for one to express an opinion. correspondent adds that he is bound to admit t the machine did not run well, the temperature ying between the two sides from a degree to and a half degrees. I cannot say that this feature of this particular machine. If I were would try to ventilate the machine more during last week of incubation. If this is not pose, I should resort to airing for long periods nout allowing the eggs to become chilled.

. J. W. (Parkstone) states that he has worked a poultry farm and has kept a small flock of own, and is greatly interested in the industry. wants to know the name of a leaflet which will him some idea of the method of feeding dry h. He can have "Chicken Rearing" and ultry Foods and Feeding" from this office for . each, post free. Then he asks me what age profit may be realised from a utility bird, how many could be reared upon an acre of dow land. This is not a very easy question to wer, but from strictly a commercial egg protion I should say his average profits would run at about 5s. 6d. per head. He will realise, ever, how much depends upon the individual ing the farm, and the local conditions.

. S. C. (Rawreth). If your birds are suffering continual diarrhoea there must be something ig with the feeding, and perhaps you will send samples of the foodstuffs you are using. To time, I suggest that you replace the fish meal a good sample of meat meal. Your sugion that you should hatch right on to August rder to get a fairly regular supply of eggs is y rather absurd. In the first place, your ks hatched after May would probably not come o lay until the end of January, and then their would be small, and it is more than probable they will moult in August, so that they will ltogether very unprofitable. If you hatched lot of chicks in January or February, and her in mid-March, and say another in mid- l you would not have the slightest difficulty taining a regular supply of eggs all the year d. In my opinion, it does not pay to hatch ks for egg production after mid-May, and nally I would not hatch after the end of April, ng due regard to profitable production. I have not seen what has been said by a big firm of breeders on this subject, who are stating they would hatch much later, but I am writing after years of experience, and I am emphatically of opinion that no chicks were ever hatched for profitable egg production after mid-May.

"Disappointed" (Lincoln). I have examined the 12 eggs sent. In every case the membrane was thin and dry, and the embryo was very contracted. The shells are very thin and porous, and this may to some extent account for the trouble, but I think you would be wise in your next hatch to keep both felts in your incubator until the 19th day, then remove only one, and supply moisture from the first. You should be careful how you store your eggs for incubation. They are best stored in bran on their sides. The sample of ground oats was of good average quality.

L. S. D. (Rainford). In spite of the advice so frequently given, it is not necessary to rest eggs at all before putting them into the incubator even if they have come a long journey. The fresher eggs are when put in the incubator, the better. I have carefully examined your feeding, and can find nothing wrong with it at all, nothing which would account for the poor egg production. The result would not be any better if you changed the mash to dry. I can only come to the conclusion that it is your stock which is at fault, and no kind of feeding will ever make them profitable.

R. B. F. (Dewsbury). Your chicks are dying because you are feeding them altogether wrongly. Bean meal is very indigestible, and you are using a very excessive quantity. The best plan would be to replace it with biscuit meal and reduce the fish meal you are using to half part. If you were to join the S.P.B.A. you would be sent a pamphlet on feeding "From Shell to Maturity," which apparently you are very much in need of. (2) You should induce the chicks to perch as early as possible. If the perches are properly constructed there will be no fear of crooked breast bones; they will be much healthier, grow faster, and not so susceptible to colds. Make the perches of plasterers' laths, nailed half an inch apart, eight or nine in a row, 18 inches from the ground, and cover these with hay.

H. B. (Hants). I have replied to my correspondent's letter through the post because the matter appears to be urgent, but his letter may be helpful to some other readers. He writes as follows:—"I should be glad if you could advise me through the columns of 'Eggs' what to do with my chicks. They are a month old, Light Sussex and R.I. Red table cross. The first three weeks they did exceedingly well, and for the past week they appear to have made no progress whatever. They stand about rather a lot and 'cheep,' and their wings look as if they are going to drop before long, with their heads in their shoulders. I am feeding as follows :—Wet mash of about 50 per cent. biscuit meal, scalded water and milk dried off with middlings, maize meal and S.G.O." He has also some other chicks which were chilled in the brooder the third day, when he was away for five hours, and during which time the lamp went out, and when he returned the temperature was 62 degrees. He at once got the temperature up to 90 degrees again, and the following day in place of milk to drink he gave 40 grains of citrate of iron and quinine to the gallon of water, which they have had ever since. About 40 per cent. have died, some with nothing in them in spite of feeling each one at night and feeding separately. He is afraid of B.W.D. He is not certain, having never seen the disease before, but the excreta is a creamy coloured fluid. Strange to say, the chicks in this condition always have a full crop, although they are very mopy and dazed. He also wants to know the best advice as to feeding for rapid growth and weight for selling chicks at about three or four months old. I can only be guided by symptoms. I am under the impression that "H.B.'s" three-weeks-old chicks are suffering from Coccidiosis, and the sooner he treats them the wiser he will be, as there is no cure for this disease. I should kill and burn all sickly chicks at once—all those which show the slightest sign of the trouble, and remove the rest to fresh ground, and continue to do this as long as a sick chick appears. See that the hoppers and drinking vessels are placed in such a position that they cannot be fouled, and give 15 grains of powdered catechu to the gallon of drinking water, and allow them nothing else to drink. It is most important that any chicks showing signs of the disease should be killed and burned at once, and the continuous removal to fresh ground is equally important. With regard to the other chicks, I do not think these are suffering from B.W.D., but it would be wise to send some for post-mortem examination. The symptoms are consistent with chill, including the colour of the excreta. The full crops merely point to arrested digestion. I do not think he can do more than he is doing. He should isolate all sick ones at once, and I would give two per cent. cod liver oil to the mash. With regard to his request for feeding for rapid growth and weight. If these are intended for table chicks it would be advisable to give wet mash feeding. Biscuit meal soaked in milk and dried off with equal parts middlings and bran, or good S.G.O. mixed with milk, and the supply of plenty of fresh green food and cooked grain will lead to their rapid development. If I wished to push chicks for early killing I should cook all the grains from the first.

H. W. P. (Chard) asks me a very interesting question. He says that on page 88 of the 1925 Year Book it would appear that, if it pays to rear a hen through her second year, it should certainly pay to keep her through the third as well, the total receipts for the third year being at least equal to those of the second year. He wants my opinion as to which is the sounder course, to clear out
stock at the end of the first laying year or at
end of the third year? So far he has practica
killed off all stock (White Wyandottes) at the e
of the second year, but, according to the figu
in the annual Register, that appears to be unsou
"H.W.P." is referring to the article by
Foulkes. At the end of the second laying yea
flock of 1,000 birds had laid 125,616 eggs, va
£925 10s. 2d., an average of 125 per bird, and
the end of the third year another flock
1,000 birds had laid 128,646 eggs, va
£916 4s. 1d., the average value of eggs laid
bird being 18s. 6d. and 18s. 4d. respectiv
In October, November and December the value
eggs laid by the second-year birds was £160 1
4d., and those of the third year was £134
Now, when we come to the last three months, J
August and September, we find that the seco
year birds had laid eggs to the value of £207
1d., and the third-year birds £229 8s. 4d., a
what is still more striking, in the last three mon
the third-year birds had laid £13 3s. 10d. grea
value in eggs than the 1,000 pullets, but this
all apart from "H.W.P's." question. In real
it amounts to this. If a bird is worth keeping
the end of her second year, is she worth keep
a third year? Based on these figures the ans
must be, Yes. There would, of course, have
be a good deal of selection. Unfortunately
have not sufficient evidence to give a defi
answer. I have found third-year birds on m
occasions to beat their own record of the previ
year, but we have to consider the average
not the individual. In my opinion, if a bird
worth keeping her second year she is worth ke
ing for the third year, always providing there
careful selection.

POST-MORTEMS.

E. A. G. E. There were no signs of any infect
trouble to be found in these two chickens, but
those of digestive failure. The gizzards and part
the intestine were packed with fine sand, and th
consider was the cause of the failure of the diges
juices to prepare the food for assimilation. Rem
of the cause should be all that is necessary in
way of treatment, but a small dose of medicinal p
ffin would expedite the removal of the sandy mater

S. W. C. In each case the cause was the same,
inflammation of the proventriculus and the intesti
This I attribute to the sharp flint grit, which
found in the gizzards, and which had made dist
wounds in the mucous membrane of the bowels,
even in the rectum.

M. V. P. Mal-nutrition and rickets were the ca
revealed at the post-mortem examination of the
chicks. Rickets being a deficiency disease in w
the system is unable to avail itself of the lime
in the food, influenced by lack of vitamines and
light, the treatment resolves itself in endeavourin
supply the deficiencies, by mixing cod-liver oil in

ı, and a full supply of green food in the form of
age. The chicks should also be allowed to avail
selves of all the sun obtainable, or at least day-
unfiltered through glass which cuts off the neces-
ultra-violet rays.

H. The post-mortem examination of the chicks
ed the cause to be pneumonia and rickets. To
ct the rickety tendency, mix cod-liver oil in the
., allow exercise in the open, as the weather
its, and supply them with a full ration of cabbage.
ped fine, and given raw. Individual birds that
leg-weakness should receive half a teaspoonful of
ver oil at one dose, but the whole of them the
the mash. In the drinking water dissolve forty
s of citrate of iron and quinine to each gallon, as
should help carry them over the interval, while
itamin deficiency is being made up by the
tc.

M. I could find no signs of infectious disease in
chicks, but only those of digestive disturbance
failure. The livers were small, but the gall
ers distended with bile, the gizzards were soft
labby, showing lack of muscular tone and ineffi-
y, the intestines contained much undigested food,
ating failure of the digestive processes. You did
nention the system of feeding, but perhaps now
you know the conditions, you can place the fault
it direction. A simple digestive tonic, such as an
on of gentian root, made by pouring boiling
, half-a-pint, on to one dram of the powdered
leaving for half-an-hour, and then adding to a
ı of water to drink, should help to tone them up
elp digestion.

C. G. The trouble in the case of the two chicks
nfectious pneumonia and rickets, both of which,
ak, can be traced to the various troubles with
ooders and lamps. A chapter of accidents like
t such a critical time of a chick's life, cannot but
o disaster. I should advise giving each of these
half-a-teaspoonful of cold liver oil, and
ue the same at the rate of ten drops a head,
in the mash. Supply also plenty of finely-
ed raw cabbage, and dissolve forty grains of the
e of iron and ammonia in each gallon of their
ng water.

EGG-LAYING TEST.

PROGRESS OF BALDERSTONE COMPETITION.

ners of the ribbons for the best scores of the fifth month
r respective sections in connection with the Balderstone
strict U.P.S. Laying Test are: Mrs. Yerburgh. R. Duck-
and J. A. Eddleston.
production has reached its highest mark this month.
h has been awarded the gold medal for the best score in
3 for the first 16 winter weeks.

ıres are Eggs and Points to date:—

ion 1 (Five Birds), Light Breed.—A. Sharples, 435, 2846; A.
s, 410, 2675; J. H. Holgate, 325, 1902; R. Duckworth, 307, 1864;
arker and Son, 273, 1806; A. Nelson, Ltd., 297, 1728; T. Rams-
, 266, 1578; S. Druce, 235, 1398.
ion 2 (Five Birds), Heavy Breed.—H. Smalley, 495, 3171; T.
ttom, 393, 2590; Mrs. Yedburgh, 354, 1964; J. A. Eddleston,
; J. T. Piper, 262, 1724; J. A. Eddleston, 304, 1722; R. Lane,

ion III. (Two Birds).—J. Smith, 165, 1020; H. Smalley, 157,
H. Holgate, 131, 822; R. Duckworth, 140, 812; R. A. Har-
, 120, 806; R. Rawcliffe, 123, 804.

Scientific Poultry Breeders' Association.

FOOD PURCHASE SCHEME.

Mr. L. G. Reddie, of Orchard Cottage, Rayleigh, Essex, has written to say that he is desirous of starting a group in connection with the Food Purchase Scheme in his area, and any members who would like to participate should communicate with him. He has only just moved in the district, and does not know any local members.

Capt. E. T. Vardon, of New Morgay Farm, Staplecross, Hawkhurst, Kent, has also written to the same effect. Will any members in the districts communicate with these gentlemen?

Mr. J. H. Briggs, of Home Farm, Spendleby, Spilsby, Lincs., has also written.

KEIGHLEY AND DISTRICT BRANCH.

The next monthly meeting of the above branch will be held in the Temperance Hall, Keighley, on Wednesday, 1st April, at 7.45 p.m. Non-members will be admitted at 8.30 p.m., when Mr. A. Sawyer, Crosshills, Keighley, will give an address, entitled, "The DO'S and DONT'S in Chicken Rearing." Admission: Members free; non-members, sixpence.

OUR FRONT COVER.

Mr. W. M. Golden's reputation as a breeder of Rhode Island Reds is almost world-wide. His strains have gained successes in open competition, both in this country and America. His pen of Reds laid, in the Harper-Adams' Test, 1,324 eggs in 48 weeks, an average of 220.4 eggs per bird. This is the highest official record for Reds in a laying test in this country. Moreover they carried off the six months' winter record at the same time, while the average weight of egg was well over the two ounces. Another great success obtained was in the Lancashire International Laying Trials, 1922-23, when he beat all breeds, including Leghorns and Wyandottes in the large breeders' section, his pen of ten birds laying 2,219 eggs, weighing 4,722 ounces. This is the best official record ever made in this country for a pen of ten birds. Not a single bird went broody, which, it will be agreed, is very remarkable.

Although his reputation was made with Reds, Mr. Golden has done remarkably well with White Wyandottes, Light Sussex, and White Leghorns.

APPLICANTS FOR MEMBERSHIP.

Meeke, B. D., Libury Hall Fruit Farm, near Ware, Herts.
Morrison, H. W., "Kosikorna," Biggin Hill, Westerham, Kent.
Gordon, Francis, Bee and P. Farm, Foxdale, I.O. Man.
Kirsch, Albert, Red Leys P.F., Normandy, near Guildford, Surrey.
Child, H. R., Broomhills Chase, Little Burstead, Essex.
Agnew, C. Leonard, Peover Cottage, Knutsford, Cheshire.
Gordon, Mrs. M., The Rae P.F., Garmouth, Morayshire.
Humphreys, W. H., Alford, Lincolnshire.
Tailby, Miss F., 75, Long Street, Atherstone, Warwickshire.
Barton, Miss R. A. C., Lakeside, Tullyhommon, Co. Ferminagh, N.I.
Doyle, G. Kenneth, 17 Woodmansterne Rd., Wallington, Surrey.
Kane, Miss K., The Hermitage, Garvagh, Co. Derry, Ireland.
Galilee, Mrs. H. G., Abraham's Farm, Bidborough, Tunbridge Wells, Kent.
Ritchie, A. G., Ransworth, Catlins Lane, Eastcote, Midddlesex.
Watson, R. S., High Elms, Prestbury, Cheltenham.
Blackwood, F. H., Hiders Farm, Framfield, Sussex.
Shove, Mrs. K., Howberry Farm, Erith, Kent.
Waddington, Wm., 35, Sun St., Haworth, near Keighley.
Preston, Fred, Laurel Mount Lodge, Keighley.
Covernton, Capt. J. W. G., The Parsonage House, Finchingfield, near Braintree.
Harper, S., Maison du Coin, St .Aubins, Jersey, C.I.
Lamb, E .C. C., The Swan Hotel, Sharnbrook, Beds.
Burnett, S., 11, Dons Road, Dundee.
Brady, Maurice H., 311, Gillott Road, Edgbaston, Birmingham.

The Use of Poultry
against Farm Pests.

By A. ROEBUCK.

Adviser in Entomology, Midland Agricultural College, Sutton Bonington, Loughborough.

INTRODUCTION.

It is undoubtedly true that insects cause serious depredations on crops, and efforts should be directed to limit their numbers and activities. It is proposed here to give briefly some results obtained up to the present by studying the use of poultry in eating specific pests.

The farm crops referred to here include the usual rotation crops on arable land and grass for hay or pasture, but do not include fruit, hops or intensive market garden crops or garden vegetables. The two special crops mentioned are mustard, which is largely grown in special areas, such as the Fen district, and willows grown in river valleys, such as those of the Trent and Soar.

It will be seen that the value per acre of the crops referred to is usually much less than, say, fruit or hops. In consequence the margin of profit is too small to warrant the purchase of spray machines and materials to anything like the same extent as on a fruit farm. Moreover, when the crop is established it is usually impossible, without doing serious harm, to go over the fields with such spray machines. There is another factor to be considered. On fruit farms certain pests may be expected every year as the land is regularly bearing the same crop, but on arable land several years intervene before the same crop appears on a particular field. In addition, some of the worst farm pests come only at irregular intervals.

Poultry, being naturally insect eaters, deserve special study with a view to keeping down these pests and preventing these irregular epidemics. With this object in view these tests were made, and Mr. R. Burt Shaw, the College Poultry Instructor, kindly collaborated.

The pests dealt with are those which occur most regularly on farms.

FEEDING TESTS.

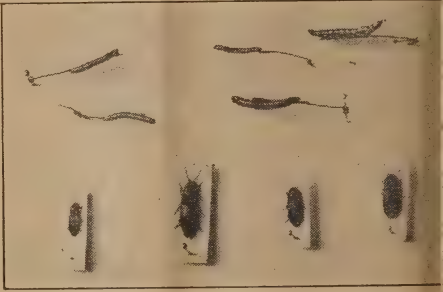
Fowls only have been used in these tests. They have been of all ages, from small chicks to mature birds, of both sexes, and of both heavy and light breeds. The following general method has been adopted in testing if an insect is eaten. Living specimens of the insect under trial were collected in quantity and fed to the birds in various ways—put in troughs before hens in coops, on bare concrete floors of houses, on bare ground in pens, etc. The birds were never starved, but brought straight from the pens at any time during the day. The same insects were fed several times on different days to the same birds to see if the fowls maintained their fondness for them. Different birds were then fed with the insects to test the stancy of the feeding habit. In this connecti is noteworthy that now and then a hen will an insect when the majority refuse it persisten

After being satisfied by repeated tests fowls would eat readily a particular pest, the step was to find if they were able to search in the field, how they got it, in what stage, a what time of the year. This is more difficu study, but, as far as possible, confirm evidence was obtained in the field in the ca each species of insect studied.

The summary table gives a list of the pests with and the times at which fowls combat the

WIREWORMS.

These well-known pests are the larvae or of several species of Click Beetles, chiefly o genus Agriotes. The adults are not pests, e of course they are responsible for laying numbers of eggs, from which the harmful l hatch. Wireworms attack all crops, incl



WIREWORMS AND CLICK BEETLES.

grass, with the exception of flax, and mustard. Thev are so harmful to crops a difficult to destroy that it is necessary to ex carefully any method of partial control, an that reason the claims of poultry require s consideration.

Fowls are specially fond of wireworms, and these are mixed with an assortment of cater and grubs they are almost invaribly eaten Wireworms live for five years from hatchi maturity, and so can be found in the soil times of the year on both arable and grass They remain below the surface of the gr chiefly in the top three inches of soil, being, whole, close to the surface on grass land and lower on arable land. They cannot tolerat of moisture from their skins, and so have main below the dry loose surface on arable Unfortunately it is only this dry loose s which hens usually scratch, so little or no goo be expected by turning hens haphazard on land. The time to have fowls on arable la while ploughing, discing or cultivating is ac in progress. While the soil is freshly turn and loose numbers of wireworms are temp sed, and fowls soon find them. If wireworms eally abundant, say over 250,000 per acre, it ite easy to watch the birds picking them up. ill be seen, therefore, that to get maximum fit fowls should be on the field while ploughs in progress, and the more birds that can be d the better. It is impossible to overstock and during these brief times. The trouble of g them on the land will be amply repaid.

nsidering next the adult beetles, they come to come above ground about May 1st in lidlands, and eggs are chiefly laid during June July. To do most good adults should be oyed during these three months, more especiluring May, before eggs are laid. Fowls very ly eat the adults, even young chickens only weeks old.

amination of numbers of fields in the Midlands, at this College and at Harper-Adams', show there are on the average four times as many vorms on grass land as on arable. There is nce to show also that they migrate from grass ble fields as adults, especially to the clover eds crop, on which they lay eggs.

nust be remembered that wireworms hatched n for the next five years to attack successive . To combat these adults it is therefore ade to keep fowls during May to July on grass adjoining arable fields, and, where possible, e fowls range over other fields, especially the during May, more particularly the early part month.

re the larvae and adults can be combated in vay suggested with an adequate number of little loss of crops need be feared.

(To be Continued.)

IONAL UTILITY POULTRY SOCIETY'S NATIONAL EGG-LAYING TEST.

t for the Fourth Month—24th Jan. to 20th Feb., 1925.

rther advance in production is to be reported for the month, and the tally of eggs rose to 32,961—an average eggs per bird. These figures compare with a total of nd an average of 12.65 per bird for the previous month. lowest daily collection was made on the second day, e eggs totalled 1,115, and the highest was 1,296 eggs on day of the month.

ting continued to give trouble, but the number of fresh as considerably less than in previous months. It has very general that few pens have entirely escaped its e.

diness became more prevalent, and 42 birds of the heavy and one of the light breeds were treated—of these 21 I. Reds.

of egg is, on the average, rather better than in previous nd greater attention appears to have been paid by to this important point, and also to their colour and character.

health of the flock was very good. The number of o date is 14—not much more than half per cent.

res are Eggs and Points to date respectively:—

EGG PRODUCTION OF LEADING PENS.

on 1.—**Championship (10 pullets).**—Metcalfe, G. B., Lechs. (R.I.R.), 678, 675; Seely, Lady, Arnold, Notts. (R.I.R.), Snowden, Frank, Cowling, Keighley (W.L.), 629, 628.

on 2.—**White Leghorns (5 pullets).**—Weeks, Fred W., oodham, Essex, 374, 374; Pallant, Mrs. E. A., Wherstead, 328, 328; Knight, Mrs. E. M. L., Odstock, near Salisbury,

on 3.—**Black Leghorns (5 pullets).**—Anderson, Lady, Harlford, 385, 382; Garrett, Roland, Wheathampstead, Herts, Clay, Mrs. Mignon E., Long Preston, Yorks, 278, 278.

on 4.—**Any Other Light Variety (5 pullets).**—Berry, P. K., Harboro' (An.), 308, 307; Thompson, J. H., Alton, Hants , 268; West, Robert, Hilly Laid, Thornton-le-Fylde (An.),

Section 5.—White Wyandottes (5 pullets).—Alexander, A. K. S., Roughton, via Norwich, 372, 372; Simmons, G. Keith, Honiton, Devon, 371, 371; Finn, J. T., Mayfield, Marple, Cheshire, 353, 353.

Section 6.—Rhode Island Reds (5 pullets).—Berry, H. John, Ottery St. Mary, Devon, 372, 371; Fraser, Lady Dorothy, Leicester, 360, 360; Cummings, J. B. V. and W., Penicuik, Scotland, 317, 317; Gawthropp, Arthur, Northampton, 319, 317.

Section 7.—Sussex (5 pullets).—Brooksbank, T., Hedon, E. Yorks (L.S.), 355, 354; Rossall-Sandford, F., Shrewsbury (L.S.), 353, 353; Knight, Mrs. E. M. L., Salisbury (L.S.), 308, 306.

Section 8.—Any Other Heavy Variety (5 pullets).—Bell, Miss Harrison, Welwyn, Herts (Buff Rk.), 315, 315; Kemp-Gee, A. M., Chesham, Herts (Buff Rk.), 308, 308; Plimpton, A. A., Beverley, Yorks (Buff Rk.), 307, 307.

CHESHIRE COUNTY COUNCIL EGG-LAYING COMPETITION.

SINGLE BIRD TEST.

Report for the Fifth Month—4th Feb. to 4th March, 1925.

The flock average for the month is 16.6 eggs per bird, the average for the Light Breeds being 17.7 and for the heavy breeds 15.7. Size of egg is on the whole well maintained.

The condition of the birds is good, and there have been no losses. Seven birds have been broody. Total points to date:—

LEADING PENS.

Light Breeds.—J. Mason (W.L.), 1010; W. J. Fletcher (W.L.), 936; E. Harrison (W.L.), 872; Campbell Sheen (W.L.), 802; W. J. Fletcher (W.L.), 796; Mrs. Ball (W.L.), 792.

Heavy Breeds.—Liverpool Sanatorium (L.S.), 1006; Mrs. Garnett (Buff Rk.), 1005; Tansey Bros. (R.I. Reds), 917; W. R. Griffiths (W.W.), 894; E. Paterson (Buff Orp.), 860; E. Carter (R.I.R.), 835.

YORKSHIRE FEDERATION OF POULTRY SOCIETIES' INTERNATIONAL LAYING TEST, 1924-25.

Report for the Fifth Month—5th February to 6th March, 1925.

The conditions generally are now improving, and the worst period is over; egg production is well on the increase and sickness very slight. The weather has been mixed, chiefly bad, on one day the birds having to be confined to their houses, but the ground is in splendid grass condition in spite of it all.

There are some interesting performances to record. Bird No. 500 has laid 28 eggs in 28 days, and is still going strong—Mrs. G. R. Poole is her owner. Edgar Watson's White Wyandotte No. 257 has laid 26 eggs of 2⅛oz. each, while Daldy and Jackson's White Leghorn No. 38 has put to her credit 23 eggs at 2⅝oz., and almost the whole of the highest individual birds' eggs are 2oz. or over. Mrs. Clay's White Leghorn 562 has laid 23, 24, 22, 22, 21 in five consecutive months, and Wright and Fortune's Buff Rock No. 366 has a sequence of 22, 23, 23, 24, 21. These are closely followed by Mr. A. Hindmarsh's Rhode Island Red No. 376 with 110 eggs, and Davey and Son's Light Sussex No. 399 with 105. The former of these two competitors is making a brave effort in the Black Leghorns, where he has improved his position to 3rd in spite of two birds being dead. The Barnvelders do not seem to be carrying the banner for their native country as high as their admirers would hope. T. Garner's Rhode Island Red Pen 78 has laid 101 eggs with weight 230½ozs., and Davey and Son's Light Sussex Pen 80 follows with 106 eggs for 230 ozs. A good many changes in position are taking place, one pen having jumped 17 positions in Class A.

The score of Bird 472 last month, should have read 19 eggs, 40¾ozs., 20¼ points, 4/7¾ value. The report will probably be a week later next month on account of Easter, but it is hoped to despatch the score sheets promptly.

Eggs laid during the month 8119, or 13.7 per bird.

Hon. Secretary: Mrs. VOWLES, Beningbrough, York.

The leading pens to date, with Eggs and Points, are as follows:—

Class A. Section 1. White Leghorns.—Mrs. Clay, Long Preston, 490, 482; R. H. Fryers, Bradley, Keighley, 460, 453; R. Rodwell, Nelson, 406, 426.

Class A. Section 2. Black Leghorns.—R. Rodwell, Nelson, 400, 394; A. White, Malpas, Cheshire, 361, 376; M. A. Hindmarsh, Skelton-by-York, 329, 342.

Class A. Section 4. White Wyandottes.—Dr. J. E. Helm, Newchurch, in Rossendale, 452, 446; Mrs. Clay, Long Preston, 381, 404; A. Snowden, Pool, Leeds, 408, 401.

Class A. Section 5. Rhode Island Reds.—Sutton and Son. Little Hoole, Preston, 354, 385; M. A. Hindmarsh, Skelton, York, 371, 382; T. Gardner, Garstang, 298, 327.

Class A. Section 6. Any Other Variety (Heavy).—Davey and Son, Sutton, Keighley (L.S.), 444, 470; Wright and Fortune, Keighley (Buff Rk.), 380, 384; J. N. Readman. Howden (L.S.), 278, 289.

Class C. Section 9. Any Variety Light Breed. Single Bird Section.—Wm. Wharton, Keighley (W.L.), 96, 94; Mrs. E. Kaye, Poole, Leeds (W.L.), 89, 91; R. and A. Johnson, Chalford, Glouc. (W.L.), 86, 89.

Class C. Section 10. Any Variety Heavy Breed. Single Bird Section.—Alf. Sawyer, Crosshills, Keighley (R.I.R.), 94, 104; M. E. and A. Robinson, Bawtry (L.S.), 102, 105; Mrs. Hawkesworth, Pool, (W.W.), 98, 105.

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES.

The third Annual Laying Competition was held at the Lancashire County Council Farm, Hu[illegible]on, under the supervision of Mr. C. H. Dobbin, the County Poultry Instructor.

The following have laid 100 eggs or over in the five months to date:—W.L. 1 (107), W.L. 79 (104), W.L. 69 (101), W.W. 3 (103), W.W. 30 (108), W.W. 50 (103), W.W. 113 (100), R.I. 80 (126). Quite a number have laid between 90 and 100.

(Continued at Foot of Column on Next Page).

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, MARCH 20th, 1925.

GRAIN AND FEEDING STUFFS.—English wheat is in fair supply, but, owing to the rapid fall in foreign wheat prices, meets with practically no demand, and the average quotations for the four markets reported has declined from 15s. 9d. to 13s. per cwt. on the week. Trade for imported wheat is extremely limited, and quotations record reductions of about 1s. to 1s. 9d. per cwt. as compared with last week, No. 1 Manitoba at London selling at 15s. 8d. as against 17s. 5d. per cwt. in the previous week. Feeding barleys are in little request, and both English and imported sell at less money. Home-grown oats record little change in value, except at Bristol, where they are freely offered and cheaper, while foreign oats meet a dull demand at lower prices. Maize is in good supply, and, with a slow trade, quotations are again reduced.

Millers' offals mostly make recent prices, but at London, bran and coarse middlings are in better supply and cheaper, while at Liverpool quotations for these two offals, owing to an improved demand, have advanced 5s. per ton. Meals generally meet a dull trade, and barley and maize meals are cheaper. Some varieties of cotton seed cakes sell at less money, while linseed cakes are reduced 5s. per ton at Hull.

MILLERS' OFFALS.—Bran (British): Bristol, £9 5s; Hull, £8 2s; Liverpool, £8 5s; London, £7 15s. Broad Bran: Hull, £9 12s; London, £9 5s. Middlings—Fine (Imported): London, £9 15s; Coarse (British): Bristol, £9; Hull, £8 5s; Liverpool, £8 5s; London, £8 2s. Pollards (Imported): Bristol, £7 10s; Hull, £7 5s; London, £7 15s. Rice Bran: Bristol, £10; Liverpool, £9 2s. MEAL.—Barley Meal: Bristol, £12 5s; Hull, £12 7s; London, £12 2s; Maize Meal: Bristol, £11 5s; Hull, £10 18s; Liverpool, £10 15s; London, £11 12s. Maize Meal (S. African): Hull, £10 10s; Liverpool, £10. Maize Germ Meal: Bristol, £10 15s; London, £10. Maize Gluten Feed: Bristol, £12; London, £10 15s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 10s; Liverpool, £10; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £12 5s; London, £13 5s. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £19; London, £21.

EGGS AND DEAD POULTRY.

A firmer tone now prevails in the trade for eggs, although both British and Irish are again quoted slightly down on the week. Imported descriptions sell more readily, and some quotations show an advance, but buyers are trading cautiously.

Week-end Prices—Eggs (per 120): British, 13s. 9d., 12s 9d; Irish, 13s 0d, 12s 6d; Belgian, 13s 3d, 12s 9d; Danish, 14s 9d, 14s 3d; Dutch, 14s 6d, 13s 9d; Italian, 12s 9d, 12s 0d; Styrian, 12s 3d, 11s 6d; Egyptian, 9s 6d, 9s 3d; Moroccan, 10s 6d, 10s 0d; Chinese, 12s 7d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 1d, 1s 9d; Irish, 1s 7d, 1s 2d; Others, 1s 9d, 1s 5d. Ducks, 1s 11d, 1s 4d. Geese, 1s 3d, 1s 0d. Turkeys, 1s 5d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 1s 4d; Second, 1s 2d. Birmingham: First, 1s 4½d; Second, 1s 3½d. Bridgwater: First, 1s 5d: Second, 1s 3d. Chelmsford: 1s 4¾d; Second, 1s 3d. Doncaster: First, 1s 8d. Dorchester: First, 1s 2d; Second, 1s 1½d. Exeter: First, 1s 4d. Hereford: First, 1s 0d. King's Lynn: First, 1s 4d; Second, 1s 2d. Llandilo: First, 1s 2d; Second, 1s 0d. Mold: First, 1s 3d: Second, 1s 2d. Newport (Mon.): First, 1s 4d; Second, 1s 3d. Norwich: First, 1s 3d. Oswestry: First, 1s 2d. Penzance: First, 1s 0d; Second, 11d. St. Ives (Hunts): First, 1s 4d; Second, 1s 2½d. Salisbury: First, 1s 3d; Second, 1s 1d. Skipton: First, 1s 9d. Truro: First, 1s 1d. *Carlisle: First, 1s 6d. *Derby: First, 1s 7d. *Ipswich: First, 1s 6d; Second, 1s 4d. *Lincoln: First, 1s 9d. *Shrewsbury: First, 1s 5d: Second, 1s 3d. *York: First, 1s 7d; Second, 1s 6d

FOWLS.

Per lb.—Birmingham: First, 1s 7d; Second, 10d. Doncaster: First, †6s 0d; Second, †5s 0d. Exeter: First, 1s 9d. Hereford: First, 1s 6d; Second, 1s 6d. Llandilo: First, 2s 0d; Second, 1s 8d. Newport (Mon.): First, 1s 7d; Second, 1s 3d. Truro: First, 1s 5d. *Derby: First, †6s 6d; Second, †3s 0d. Ipswich: First, 1s 8d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 5d; Second, 1s 3d. *York: First, †5s 6d; Second, †4s 6d.

DUCKS.

Per lb.—Exeter: First, 1s 6d. Llandilo: First, 2s 0d. *Ipswich: First, 1s 6d.

* At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. † Per head.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

"Eggs."

Wednesday, March 25th, 1925.

CONTENTS.

EDITORIAL ... ...
MODERN POULTRY FEEDING ... ...
ANSWERS TO QUERIES ... ...196 an
ANGORA WOOL FARMING ... ...
GLOUCESTER EGG-LAYING TEST ... ...
MOBBED BY CUSTOMERS ... ...
MALPAS U.P.C. LAYING TRIALS ... ...
BARROWIN-IN-FURNESS AND DISTRICT U.P.S. COMPETITION ... ...
THE INTERNAL MECHANISM OF THE EGG-LAYING MACHINE ... ...
WARE AND DISTRICT U.P.C. EGG SHOW ... ...
S.P.B.A. ... ... 201 an
E. ANGLIAN LAYING TEST ... ...
POST-MORTEMS ... ...
BALDERSTONE EGG-LAYING TEST ... ...
THE USE OF POULTRY AGAINST FARM PESTS ...
NATIONAL U.P.S. TEST ... ...
CHESHIRE C.C. COMPETITION ... ...
YORKSHIRE FEDERATION INTERNATIONAL LAYING TEST ... ...
LANCS. FEDERATION U.P.S. TEST ... ...
MARKET REPORT ... ...

Contributions.—The Editor will always be pleased to co contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existe "Eggs" to their poultry-keeping friends.

Subscriptions to "EGGS," 12s. 8d. per annum; 6s. 4d. f months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Be Rudgwick, Sussex.

All communications with regard to Advertisements shou addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of firs of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," imperative that new advertisements and alterations are re by FIRST POST ON FRIDAY MORNING to ensure insertion following Wednesday's issue. It is hardly necessary to add the earlier in the week we receive copy the better it is for one concerned.

PROOFS.

We cannot guarantee to submit proofs unless plete copy is to hand by FIRST POST ON MONDAY PREVIOUS TO THE FOLLOW WEDNESDAY WEEK'S ISSUE.

The following birds have been broody:—W.W. 29, 45; 73, 84, 85, 98.

Fifth Month's Report—5th February to 4th March, 192

The following are the leading positions in each section, ing number of Eggs and Points for the five months:—

Section 1. White Leghorns, Large Breeders (Three B E. Cam, 261, 1817; R. Bessley, 241, 1640; J. Booth, 252, 16 Hamnett, 230, 1611; A. C. Harrison, 246, 1607; J. Sutton, 232, 14

Section 2. A.O.V. Light Breeds, Large Breeders (Three —C. Rawlinson, 234, 1468; T. W. Gardner, 130. 778; W. Hamne 742; Mrs. J. H. Hill, 101, 637; F. Lord, 116, 632; J. P. W 72, 486.

Section 3. White Wyandottes, Large Breeders (Three B P. Williamson, 266, 1804; C. Bates, 253, 1759; J. R. Dawso 1751; W. Barron, 283, 1629; W. Hamnett, 220, 1523; R. B 215, 1354.

Section 4. A.O..V. Heavy Breed, Large Breeders (Three —F. Harvey, 228, 1606; A. T. Walker, 218, 1477; G. Cobha 1463; T. Braithwaite, 199, 1403; W. Weardon and Sons, 20 J. Basnett, 179, 1310.

Section 1. Light Breeds, Small Breeders (Single Bir Stanley, 87, 626; W. Ashton, 83. 576; F. Wilkinson, 99, 54 Fletcher, 81, 534; O. R. Lees, 73, 492; G. A. Wolstenholme, 66

Section 11. Heavy Breeds, Small Breeders (Single Bir W. Pearson, 100, 700; H. Harrison, 88, 524; W. R. Robinson, A. D. Walton, 60, 403; D. Braithwaite, 61, 380; Mrs. J. A. 58, 338.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, APRIL 1st, 1925.

Editorial.

HE EVILS OF THE HIGH RECORD CRAZE.

HIGH RECORDS AND CONSTRUCTIVE BREEDING NOT ALLIED.

hus the title of an article in our contemporary, oultry World," from the pen of Mr. C. A. House, ose opinions command respect. In much that he to say we are in cordial agreement, but in this icle he has written wholly in the fancier spirit, the ity breeder falls heavily under his lash, and his -title is scarcely logical.

Ve differ entirely with Mr. House when he says t "High Records and Constructive Breeding are not ed," while, at the same time, we agree with him en he talks of "The Evils of the High Record ze"; but a "craze" is one thing, to breed in- riminately from high record hens may come within t category, and be justly condemned. The intelli- t use of the "exceptional" is to our mind, how- r, *constructive breeding in the best sense of the n*, whether applied to the high record hen, or any- ng else which tends to improve the economic quali- . There is nothing constructive in breeding a bird excess of feather, exaggerated head-points, mon- us size, because they are all destructive, or it ld be more correct to say, opposed to the economic lities of the breed.

ou cannot raise the average of a breed by breeding n the *average*. That can only be done by breeding n the *exceptional individuals*. If you depend on *average* the "pull of the race" is too great, and r *average* would fall to a lower standard each year. ollows that if you wish to raise your average, you st do so by continuously breeding from the excep- al, but the "exceptional" must have qualities er than a high record, or she will inevitably lower average, if she is lacking in essentials to breed rovement, such as constitutional vigour. We lily admit that the craze for high records is respon- e for many of the evils of the present day, and, dentally we may say, that the formation of the .B.A. was due in the main to the complaints from eral sources of the effect of indiscriminate breeding n high record hens. Right from the first we have ted to the folly of it, but that is an entirely diffe- t thing to asserting that High Records and Con- ctive Breeding are not Allied. *They are allied*, in strictest sense of the word.

Now let us follow Mr. House a little farther:—

> "BACILLARY WHITE DIARRHOEA.
>
> "Quite recently, when in the company of several poultry breeders, some of whom were exhibition men and some utility men, the subject of bacillary white diarrhoea cropped up. Two members of the company, both men of national and international fame as breeders, exhibitors, and judges of fancy stock, said they had never seen a case among their own stock, and they had never met an exhibition man that had. More, they gave it as their definite and decided opinions, that bacillary white diarrhoea, and many other diseases of which so much is said and written to-day, were the outcome of breeding for excessive egg production."

This will not do at all, Mr. House. The use a vulgarism, your exhibitors of national and international fame were "talking through their hats," and they knew it, or if they did not, they should have done. Have they ever heard the tale of the man who summoned another for calling him a "hippopotamus?" The magistrate drew attention to the fact that this happened three years before. "Yes," was the answer, "but I saw a hippopotamus for the first time yesterday." Mr. House's friends, unless they are very new to the game, had simply not recognised their hippopotamus under its new name. Bacillary White Diarrhoea was known in this country years before the breeding of fowls for heavy egg production, and was just as fatal as it is now. We then knew it as "White Scour," and we have been in many fanciers' yards, and seen them endeavouring to check it. Of course, it did not assume such serious proportions as it does now, because birds were kept in small units, and the chance of infection was much more remote. We are, at this moment, interested in an outbreak on the farm of a fancier who is also of national and international fame, a breeder, exhibitor and judge, and outbreaks on fanciers' farms are not at all uncommon; one only hears less of them because the chicks being run in small units, they are on a smaller scale.

Again, Mr. House writes:—

> "The epidemics of Bacillary White Diarrhoea and diphtheritic roup, of which we hear so much to-day, are due to the fact that many of our stocks have been pushed and pushed to such an extent to create records in egg production that they have, as I heard it most expressively put the other day by an experienced breeder, "no guts."

It will not do, Mr. House. Breeding from bad stock, that is, stock lacking in constitutional vigour necessarily results in a lowered resistant power to disease, but it does not cause disease, and what we have said of B.W.D. is equally as applicable to diphtheritic roup. The fancier is as liable to the disease as the utility breeder. and was well acquainted with it and its ravages years before the latter was known. We have seen birds suffering from it at shows, and actually saw a Minorca cockerel, which was awarded first and special, dying in the show pen from it. We have seen outbreaks in cross-bred and mongrel stock, and know of one with cross-breds at the present time, which have certainly not been bred for heavy egg production. Further, we have had four cases of B.W.D. with cross-bred stock reported within the last few weeks. We agree with Mr. House in his protest against the indiscriminate breeding from high record hens, but if he will permit us to say so, he has carried it too far, and his arguments are not convincing.

One other protest we heartily endorse. He says:—

> "When buying eggs, day-old chicks, or stock birds, breeders should not be led away by fictitious claims of those who talk about their 250 to 300-egg strain. Single individual record producers do not make a strain, and it is not honest for a man to take a record of his best pullet, and give it as that of his flock. He may have had one, and only 280-bird in 20 years of breeding, and his flock average may be nearer 150 than 200. Buyers should insist upon flock averages and not individual performances."

It is over 12 years ago that the late Mr. Oscar Smart protested against this form of advertising, and showed how deceptive it was. Scores of times we have exposed it in "Eggs," and all such advertisements have been refused, and explanations of the meaning of "strain" have been given. But in a contemporary we see ten breeds advertised by one advertiser from "306-egg strain, 284-egg strain, 288-egg strain, 282-egg strain, down to a modest 221," and eggs are priced at 6s. per dozen. A breeder, who is worthy of the name will, of course, not be attracted by this, but what of the beginner—the man whom we want to encourage? We do not agree with Mr. House that buyers should insist on flock averages, and not individual performances. Perhaps we may have misunderstood him, but if we were out to improve stock, we should demand individual pen records, for a flock average must mean the inclusion of some individuals which would be worthless as breeders.

GLAMORGAN AGRICULTURAL COMMITTEE.

COUNTY EGG LAYING TRIALS, 1924-25.

19th October, 1924—22nd August, 1925.

Figures are Eggs and Points respectively:—

Light Breeds.—J. Joshua, Tondu (W.L.), 42, 153; R. J. Evans. Abertridwr (W.L.), 32, 115; Mrs. E. H. Parry, Llanwit Major (W.L.), 21, 103; G. Bundy. Port Talbot (W.L.), 4, 101; W. H. C. Llewellyn, Bridgend (W.L.), 34, 97; Howell and Phillips, Barry (W.L.), 33, 93.

Heavy Breeds.—J. Joshua, Tondu (R.I.R.), 53, 250; Griffiths and Hall, Bridgend (R.I.R.), 49, 209; R. J. Evans, Abertridwr (R.I.R.), 33, 201; J. R. Thomas, Barry (R.I.R.). 22, 200; A. Evans, Barry (R.I.R.). 70, 193; J. Joshua, Tondu (R.I.R.), 40, 173.

The Use of Poultry
against Farm Pests.

By A. ROEBUCK.

Adviser in Entomology, Midland Agricultural College, Sutton Bonington, Loughborough.

(Continued.)

LEATHERJACKETS.—Another series of w known pests found both on arable and grass l are the grubs of several species of Crane Flies Daddy Long Legs, the chief being Tipula Palud and Pachyrhina Maculosa. As in the case of w worms, they are chiefly root feeders, but occasi ally they will bite the young plants through j above the ground. They attack any crop, a although appearing year after year on some fiel they are usually spasmodic in their appearance It is impossible to tell when they will come a pest, and therefore fowls afford a certain meas of prevention where they can be employed in proper way. The Crane Fly is well-known w its long legs, which seem to be always in the w It is found drifting over fields from May to S tember, and is always more abundant on the gr land. Eggs are laid from June to September, a the leatherjackets which hatch are fat, s coloured, legless grubs, which may reach 2 incl in length in spring. They occur in the soil o the winter till the following March or April. It during this period that damage is done. Fo very readily eat them, but again they keep for most part under the soil. They are best comba by fowls running on the arable land while various operations of cultivation are being carr out. They do crawl over the surface of the grou during the dull damp winter days, especially fr November to February, and fowls running over arable fields at this period devour large numbe It is possible to save winter cereals during th months by fowls, and the manure they depo gives further great benefit at a time when it very acceptable to the plants.

LEATHERJACKETS AND CRANE FLY.

CUTWORMS.—Cutworms, or Surface Cat pillars, are the larvae of a number of night-flyi rown moths, very similar in appearance and abits, and on an average about two inches across he expanded wings. The two commonest are the Ieart and Dart Moth (Agrotis Exclamationis) and he Turnip Moth (Agrotis Segetum). The Cater-illars appear from June to the following April or Iay feeding on a variety of crops. They remain ust under the surface of the ground during the ay and feed above ground at night. Cereals are aten while quite small; turnip bulbs are entered nd hollowed out. Mangels in the autumn are itten right across, just below the ground level. hey frequent grass land also, and migrate from to the arable in certain seasons only. What onditions determine such migration are not nown. Poultry run on the land while cultural perations are in progress readily eat up the cater-illars. In addition, fowls can reach a great many y scratching, and so destroy them. The red-rown chrysalids also are readily eaten when urned up with the soil about the end of May and ne.

MUSTARD BEETLE.—Known to science as Phaedon Cochlearie." Few people outside mus-rd growing areas can realise what a serious pest can be. It occurs in prodigious number, and, though possessing wings, it seldom uses them, eferring to walk in veritable armies. In such area as the Fen District of Lincolnshire, one n sometimes see them migrating from one field another in July or August. Their route may be ross a short stretch of road, perhaps ten yards ide. This will show as a blue-black patch for ssibly a fortnight as the swarm of beetles are lking continually across. Each insect is under quarter of an inch long. In September last the iter saw a field of swedes sown for seed. The ntre was a beautiful green colour, the outside e soil, and around the green was an inky black about a foot wide. When one got to this it nsisted of immense numbers of the beetles stroying every vestige of the plants and gradu-working to the centre of the field.

VATERCRESS BED DESTROYED BY MUSTARD BEETLE.
(Some beetles still on the stalk in centre.)

When the frosts appear the beetles pass to the ditches and hedgerows and shelter under tufts of grass, etc., until the following May. Fowls eat them quite readily, and allowed to range over the area will prevent very largely the egg laying in May and June. Winter and early spring are the ideal times for combating them, and only hens can do it successfully. They can hunt out the beetles in their shelters, whereas spraying ditches, etc., is a hopeless task. After June the beetles are on the mustard, and fowls will not be able to get them. Another generation appears on the mustard, and finally a second set of adults appear from the end of July to the beginning of September. Swarms of these are taken to the stack, and the rest are temporarily left on the mustard stubble. A pen of birds round the stack would be excellent, and ranging birds on the stubble will begin the destruction of those destined to shelter over the winter to carry on the progeny next year. This pest is almost impossible of control in any other way, and fowls offer very great hopes of success.

Watercress beds are sometimes attacked by this beetle, and the crop totally destroyed. It is impossible to spray this crop, but fowls can clear the beetles from their winter shelters and while migrating to the beds in May and June.

BLUE WILLOW BEETLES.—Willow growing is essentially a specialised branch of husbandry, but this crop is included in this article to illustrate the fact that poultry can be used with equal advantage in such special cases as in orthodox farming. Osiers, Soft Rods, or Full Tops, varieties of the species Salix viminalis are attacked by this beetle, Phyllodecta Vulgatissima. Both in the adult and the larvae stages the insect riddles the foliage, leaving nothing but the bleached network of veins. The plant is thus deprived of all means of making its food, and growth is therefore stopped. The adults hibernate under dry herbage, litter on the soil, under bark, between buds, etc., and remain in these hiding places until about the middle of May, in the Midlands, when the willows have commenced to grow. They now swarm over the young growing shoots, as many as 200 beetles being often found on single heads. They begin egg laying about the second week in June. The beetles are readily eaten by fowls, and the pest is best combated in this stage. If it were possible to run fowls on the land all the year round they would soon eradicate this as a pest. The time at which they do most good is between November and mid-June. Unfortunately the beds are often under water during a part of the winter, thus making it impossible to keep fowls on the beds, but this is usually not the case during April to June. If poultry be kept in the land during these months at about 200 birds per acre the pest would be well controlled.

It is hoped that the above examples have illustrated the great use poultry can be in aiding farmers even if no other advantage be claimed than that of destroying his crop pests. In addition, of course, they hold a great claim to consideration for the manuring of the crops. Poultry experts will doubtless also be able to prove that they are at the same time producing a profit fr eggs and meat which more than counterbalance cost of equipment and management.

SUMMARY.

PEST.	CROPS ATTACKED.	HOW PESTS ARE CAUGHT BY FOWLS.	TIME OF YEAR.
Wireworms and Click Beetles (Agriotes species).	Attack the roots of all crops but linseed.	(1) As beetles on the surface of the ground, especially egg-laying females and especially on grass land. (2) As wireworms when freshly turned up by the plough, etc.	(1) May to July. (2) Any time of the year.
Leatherjackets and Crane Flies (Tipula species).	Attack the roots of most crops.	(1) As Crane Flies drifting over the land, especially grass land. (2) As leatherjackets when turned up by the plough. (3) As leatherjackets walking on the surface of arable land on wet days.	(1) Rarely or only accident taken by fowls from May . September. (2) June to April. (3) December to February.
Cutworms, the caterpillars of certain moths (Agrotis segetum and A. Exclamationis).	Winter cereals, spring cereals, turnips, mangels, biting through the cereals and eating bulbs of the root crops.	(1) As chrysalids when turned up by the plough, etc. (2) As caterpillars by scratching and by being turned up by cultivation.	(1) May, June. (2) July to May.
Mustard and Watercress Beetle (Phaedon Cochleariae).	Mustard and watercress, eating foliage, turnip, swedes and cabbages, grown for seed also destroyed.	(1) As adults in their winter shelter. (2) As adults migrating from crop to crop or on crops.	(1) October to May. (2) June to September.
Blue Willow Beetle (Phyllodecta Vulgatissima).	Willows of the Species Salix Viminalis, eating the leaves.	(1) As adults in their winter shelter. (2) As adults on young shoots.	(1) November to May. (2) May and June.

"DAILY MAIL" EGG-LAYING TEST OF FIRST-CROSS PULLETS, 1924-25.

REPORT FOR FIFTH MONTH—7th Feb. to 6th March, 1925.

For the fifth period of four weeks the records show a further advance in production—the eggs laid numbering 12,860, an average of 18.32 eggs per bird.

These compare with the previous month's figures of 12,124 and 17.22 respectively, and bring the total eggs laid to date to 48,041, making an average of 68.25 eggs per bird during the 140 days.

This record compares very favourably with those made in Laying Tests by pure-bred pullets.

Size of eggs also showed further improvement, the percentage of first grade eggs being 90.18 as against 86.81 last month.

Broodiness, which many breeders contend is increased by cross breeding, was a little more prevalent than last month, but the number of birds affected (19 in all) is still very low for the time of the year—the percentage requiring treatment being only 2.7

The health of the birds was very good throughout the month.

Figures are eggs and points respectively:—

EGG PRODUCTION OF LEADING PENS (Seven Pullets).

Section 1.—White Leghorns X White Wyandottes.—Barley, F. W., Kings Norton, B'ham, 693, 674; Sutton & Sons, H., Little Hoole, near Preston, 584, 574; Abbott, James M., Hoebridge, Old Woking, 568, 554; Hargreaves, G. H., Woodfield, Brierfield, 556, 552; Coddington, John W., Muston, Bottesford, 557, 541.

Section 2.—Black Leghorns X Rhode Island Reds.—Ashworth, J., Withnell, near Chorley, 602, 592; Robinson, M. E. & A., Kingswood, Bawtry, 601, 575; Berry, P. K., Weston-by-Welland, Market Harboro', 591, 561; Metcalfe, G. B., Claydon Farm, Lechlade, 538, 517; Beattie, Wilson, Rothersthorpe, Northants, 510, 506.

Section 3.—Any other First Cross.—Crabtree, Mrs. W., Twiston, near Clitheroe, 633, 615; Barley, H. D., Kings Norton, Birmingham, 635, 614; Crabtree, Walter, Twiston, near Clitheroe, 611, 592; Watkins, Edward, Cross-in-hand, Sussex, 539, 538; Martin, Frank, Culdrose, Helston, 537, 506.

Section 4.—Any Cross showing Sex-linked Inheritance.—Sowerby, Hugh, Caistor, Lincs, 614, 589; White, P. E., Market Drayton, Salop, 612, 513; Thorpe ,E. J. & Correll, C., Hallow Farm, near Worcester, 579, 497; Mansell, A., Kingston Stert, near Thame, 600, 494; Hall, R. Charles, Coulsdon, Surrey, 461, 451.

ST. DUNSTAN'S (2nd) WINTER EGG LAYING TEST.

This test, confined to St. Dunstaners, held at St. Dunst Home Farm, King's Langley, Herts, started on 1st November and finished on 20th February.

There were five sections—White Leghorns, Rhode Island White Wyandottes, Any Other Light Breed, and Single Bird— entries comprised 56 pens of four pullets each, and 19 in Single Bird Section—a total of 243 birds in all.

Production for the 16 weeks was 8,427 first-grade eggs, second-grade, and 169 third-grade, making with 208 unrecorde total of 10,804, and the average per bird was 44.45.

Some excellent individual records have been put up, notabl A White Leghorn, owned by Mr. D. Gibson, of Thornton Innerwick, East Lothian, laid 83 eggs; a Rhode Island Red, ov by L. Johnson, of The Medlars, Hatfield Broad Oak, Essex, 80; and one owned by A. E. Trigg (as below), laid 79; a W Wyandotte, owned by T. A. Carter, of Newstead Farm, Black Darlington, laid 79; a White Wyandotte, owned by A. Griffe The Hollies, Lugwardine, Hereford, laid 76; and a White Bresse, owned by Mr. A. H. Capper, of Padworth Poultry F Padworth, Berks, laid 76.

A pen of Rhode Island Reds, owned by A. E. Trigg, of Wal Tudwick, Tiptree, Essex, laid 288 eggs in the 16 weeks, and the Challenge Cup for the best pen in Test.

The health of the birds was excellent throughout the Tes

The figures representing Eggs and Points of the leading are as follows:—

Section 1. White Leghorns.—Mr. D. Gibson, 305, 267; A. Ch 226, 226; Mr. C. R. Bulman, 259, 222; C. H. Brown, 220, 220; M A. Ramsden, 218, 216; J. H. Tindall, 215, 215; W. J. Wood 201, 201.

Section 2. Rhode Island Reds.—A. E. Trigg, 288, 288; T. ham, 252, 251; C. T. Condon, 218, 218; A. Urry, 202, 201.

Section 3. White Wyandottes.—T. A. Carter, 252, 252; A. Gri 226, 226; T. W. Chamberlain. 202, 202.

Section 4. Any Other Light Breed.—Mr. A. H. Capper (La 236, 236; F. V .Hesketh (Anc.), 142, 142.

Section 5. Single Bird.—Mr. A. H. Capper (R.I.R.), 65, 65 Burgin (R.I.R.), 58, 58; Mr D. McLaren (R.I.R.), 56, 56; J. Woodh (R.I.R.), 51, 51.

Answers to Queries.

By the EDITOR.

DUCKS.

r. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

ODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

lies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

aders are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

plies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

L questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

M. W. S. (Chishall) writes : "I reared almost a ousand chicks last spring on dry mash with ick feed. This year I intend rearing a larger imber of turkeys, and have no experience of rearg them in large numbers at all. Have you any xperience of rearing turkey-chicks from the shell 1 the dry system? If so, was it as satisfactory s wet mash and grain? I know what a great fference the dry method makes in labour exended, but cannot afford to risk the turkeys not riving to the best possible extent. Would the sual slightly permanganated water affect caston drinking troughs in such a way as to make the ater harmful for turkeys or fowl generally? Are rkeys ever reared in large breeding flocks of, y, 80 hens with seven or eight stags in one field? ave found this system excellent for fertility with hite Leghorn fowls, but cannot hear of it having en tried with turkeys."—Turkeys may be reared iccessfully on dry mash. Three or four of our aders have written to that effect. I have had personal experience with it, but, taking in view e fact that the birds are intended for table later, should personally prefer to rear on a cooked mash get the best quality table bird. In answer to e second question ; permanganated water would fect cast-iron drinking troughs just as it would alvanised ones. May I inform my correspondent at all the best veterinary authorities assert that rmanganate in the drinking water is in any case no good in checking or preventing disease with oultry, and in some cases it is possibly harmful. have never heard of turkeys being reared in large reeding flocks of, say, 80 hens with seven or ght stags in one field in this country.

C. N. G. (Newmarket) writes that some of his birds have white greyish spots on the comb and wattles, and others are getting it. He wants to know what the trouble is, and what he shall do. I think there is no doubt that the trouble is Favus, or White Comb. This is a very contagious disease, the spots are a fungoid growth, and they will continue to enlarge and run together, and become more inflamed unless treated at once. Generally the trouble is localised in the head, occasionally the feathers are affected. The part should be first washed with warm soapy water, in order to soften it, and it can then be dressed with Izal one part, glycerine 8 parts, or with carbolised vaseline. It would be advisable to isolate all affected birds.

J. N. (Oldham) has been getting 24 and 26 eggs a day from 24 pullets, and now he wants to know how to adjust the mash for the spring and summer months. You must be guided by the bodily condition of your birds rather than by the season, "J.N." As a rule, at the end of May eggs tend to become smaller and fewer ; that is one indication that the pullet is drawing too heavily on her bodily reserves, and in that case it is advisable to decrease the bulk of the mash and feed more maize. This will prevent a premature moult and also keep the birds in good bodily condition when moulting. In answer to his second question —in-breeding does not directly cause disease, but the progeny resulting from closely-bred stock have very low powers of resistance to disease. The sample of ground oats is of good quality and value, but it is not "Sussex" ground.

Infertility (Whitehaven) is using an old male which mates with the hens, but a large proportion of the eggs are infertile, and the hens' sides are cut about a good deal. He wants to know what he can do ; and also he is losing his chicks under hens because the latter tread on them, and he wants to know how to prevent it. Old males are much more fertile when their spurs are pared, and that is what my correspondent should have done before mating. The simplest way to do it is to put a hot baked potato on the spur ; this will soften the horn, and then it can be pared down, care being taken not to make it bleed. In reply to his second question. This is, I expect, a case of that "soft cosy bed of hay" which one so often sees advised. When there is a lot of hay in a coop, the hen does not feel the chick when it is under her feet, consequently she crushes the life out of it. If the hay is removed, and a little sand or ashes scattered over the floor of the coop, I don't think any further losses will occur from this cause.

R. D. (Saffron Walden) asks whether Felch's chart can be followed with success. It has been given him as the ideal system of breeding. I do not believe in breeding by chart, especially where egg production is concerned ; there should always be individual selection, and, as I have explained, line-breeding is unnecessary and inadvisable where the object is heavy egg production. Felch's chart involves two forms of in-breeding, the dam to her sons and the sire to his daughters—a dangerous proceeding even in experienced hands, and particularly dangerous where high fecundity is concerned. I would advise "R.D." not to breed on these lines.

A. K. (Nantwich) has a flock of White Wyandottes, and says that he "is not a little proud of their powers of production," but there is a fly in the ointment —a high percentage of them have single combs, and he has been told that the only means of "breeding it out" is by mating to an exhibition male. He asks if it is true that single combs do not appear in exhibition strains, and whether he shall follow this advice or not. His second question relates to some three weeks' old chicks, which are "not doing." He asks whether I recommend an iron tonic in the drinking water.—In reply to his first question, he cannot breed out the single comb by mating to an exhibition male, and it is incorrect to say that single combs do not appear in exhibition strains. I doubt whether there are many strains which are free from this trouble. I would not advise this policy, for in attempting to breed something out by the introduction of exhibition blood, we often breed something in which we do not want. Supposing that his exhibition male was homozygous (pure) for rose-comb, if he was mated to rose-comb hens which were impure (carried the single-comb factor), the progeny would all be rose-comb, because it is dominant to single; but a high percentage of them would carry the single-comb factor, and this would appear in the next generation. Then, of course, there is the chance—no small one—that the exhibition male may not be pure for rose-comb. He can only breed out the single-comb by testing his stock. Mate a rose-comb male to single-comb hens. If the progeny come with rose-combs, then the male is pure for rose-comb. Then mate rose-comb hens to a single-comb male, those hens which throw chicks with only rose-combs will be "pure," and can safely be bred from. Of course, the progeny from these matings must not be used. As to his second question, I don't know the cause of the chicks flagging. Are they infected with insect life? In any case I should examine for this, remove to fresh ground, see there is no overcrowding, and add a teaspoonful of cod liver oil to the pound of mash; an iron tonic will do no harm, and may do good.

B. G. B. (Goudhurst) has had a batch of chicks hatched in an incubator (the first lot this season), about a fortnight ago. In about three days they began to die off, so he sent some to Major Saunders, who said it was B.W.D. They have since nearly all died, and he is going to kill the survivors. The reason he is writing is to ask my opinion as to how they became infected. Th foster-mother was new, first time used, so it coul not be that. He has sold some sittings of egg from the same stock (hens of his own breedin mated to cockerels direct from a well-know breeder), and the chickens have been healthy. H has also two or three broods hatched under hen and has not lost one so far, so that this stoc seems to be all right, and it leaves only the incubator; and he mentions that he hatched a batc of chicks early in January for a friend, and the reared all right. He put down some more eggs i the incubator at once, before he knew of th B.W.D., and they are due early next week, an he wants to know what precautions he can take The incubator was wiped out with disinfectan (Lysol) between the hatch. We have had so muc on B.W.D., and the matter has been so fully explained in these columns that I am rather surprise at receiving this letter. "B.G.B." should understand that these chicks were infected whe hatched; that is, they were hatched from the egg of a hen or hens whose ovaries were infected wit the bacillus pullorum. His statement that he ha had no previous trouble with his stock perhap makes it the more difficult for me to understand but every egg laid by an infected hen would necessarily be infected. It is possible, too, that he has no previously hatched any eggs from this particula hen. My own impression is that comparatively fe chicks are hatched infected, but that infectio takes place in the incubator, and shortly afte The possibility of infection from egg to egg ha been considered, and it is now thought to be possible. With regard to what precautions he ca take with the birds now hatching. If this is a hot air machine he should remove the chicks as quickly as possible so that they do not have a chance of picking the droppings, as infection is through these; kill off all weakly ones at once. It would be advisable to darken the machine during hatching, and this will prevent their pecking at the excreta. Watch the chicks closely, and give them sour milk to drink as soon as hatched, and continue this. More than this he cannot do.

B. S. (Cambridge) sends a sample of meat meal, which should be sold as bone and meat meal, the percentage of bone being very excessive; at 18s. per cwt. it is very dear, and I cannot advise him to buy it. The ground oats are a little too husky for young chicks, but are good value for money, and could be used for the older stock. In answer to his other question, Buff Leghorn cockerels mated to White Leghorn hens would not give chicks the sex of which could be detected at hatching, and there is no cross with the White Leghorn which would do so.

K. L. (Blackburn) has had a bad hatch, and heavy losses with those which did hatch; many of them had not absorbed the yolk, and he wants to know the cause. If he had sent some details I

ld possibly have helped him, in their absence
s only possible to suggest too high a tempera-
e, and advise him to have his thermometer
ted. Another brood of chicks are constantly
ezing, and he asks what he should do in such a
e. This may be due to colds caused by floor
ughts. In that case he must, of course, remove
cause, but had this been so there would have
n a fairly high mortality, and that he does not
ntion. Is the litter dusty? Peat moss often
ses this sneezing and water eye with young
cks. In the event of its being due to a chill,
best treatment will be to give 40 grains of
ate of iron and quinine to the gallon of drink-
water, and allow nothing else to drink.

alopian (Shrewsbury) has White Wyandotte
cks which are not making progress, their
thers appear to be growing too fast for their
lies, and they look anaemic. He sends me sam-
s of the foodstuffs he is using, and asks if I
k any improvement would be effected if he fed
dry mash. There is nothing wrong with the
ples of food he sends, and I do not think the
uble is due to the feeding at all. Dry mash
ld certainly not make any difference at all.
trouble arises in all probability from over-
wding, or a badly ventilated brooder. There is,
, the possibility of insect life. He should look
hese matters, and at the same time the addition
2 per cent. of cod liver oil to the mash would
beneficial.

. L. (Notts) has several pullets suffering from
lapsus, and wishes to know the cause and treat-
nt. Prolapsus is more common in the flush
nths than at any other season of the year, and
erally the most prolific pullets are the sufferers,
ough poor layers when laying an abnormally
ge egg are also subject to it, and overfat hens.
to prevention, too stimulating a diet should be
ided, and it is wise to stop maize feeding for
time being and reduce the amount of animal
d. For treatment, the part should be washed
a one per cent. solution of Izal, then bathed
alum and water, or even strong cold tea, then
tly put back, and smoothed out with the finger
ts natural position, the vent bathed with the
n and water or cold tea, and the bird kept
ectly quiet.

ight (Wendover) wants to know if I have any
res which would show the effect of artificial
t on second season birds, and whether I think
lighting would induce a second year hen to
luce more eggs in the year. I have no figures
would help him, and I don't think that light
ld cause a hen to produce more eggs in the
r.

POST-MORTEMS.

D. M. B. The post-mortem of the fowl showed that the bowel had become constricted by a peritoneal band, which formed the attachment of the remnants of the yolk sac. These cases, which are fairly common, are unpreventable, and may be regarded as accidental in character.

J. B. C. Rickets and pneumonia were the post-mortem conditions found in the four chicks, either of which is sufficient to account for the leg weakness. I should consider that the pneumonia was secondary to the debility that is associated with rickets, and that, when this deficiency trouble is corrected the losses will be reduced. At the first sign of "wabbling" give half a teaspoonful of cod liver oil, and for treatment, "en masse," mix cod liver oil in the mash, give plenty of finely-chopped raw cabbage, and allow plenty of exercise in the open air, but protect from cold winds and draughts.

R. J. The post-mortem examination of the hen showed the cause to be peritonitis, due to rupture of the uterus. There were two soft-shelled eggs, one in the peritoneal cavity, and one in the egg canal, and it was doubtless the excessive straining that caused the rupture and allowed one of these to escape. I noticed that the grit in the gizzard was mostly granite and flint, and I should advise supplying oyster shell in addition.

C. W. Beyond a condition of intense anaemia there were no lesions to be discovered, and nothing to indicate that the trouble was infectious. In my opinion, the cause is of a severe digestive nature, due perhaps to some deterioration of one or more of the food constituents. It is possible that an examination of the food might reveal that some of it has become musty or spoiled, which would be quite enough to cause the trouble. I should advise putting them on forty grains of citrate of iron in each gallon of the drinking water one day, and the next on catechu water, one dram to three gallons. This at least should control the diarrhoea and combat the anaemia.

H. S. The post-mortem examination of the chicks showed the cause to be coccidiosis only recently acquired, as, although the organisms were easily found in the first part of the bowel, it was only evident in the caeca in one case. I expect you will ask me how the place got infected, as it is new ground, and the equipment is also new, and that may be more than I can answer. Adult birds are frequently carriers of the organisms without themselves being affected, although at times the mortality among old birds runs high. Wild birds also disseminate the disease, and it is particularly destructive to pheasants. The prevention of spread and the treatment I have already given you in my former letter, so there is no need to repeat, but I should like to emphasise the fact that the floors and runs should receive special attention in the way of disinfection, as the chicks are in such close contact, and are continually picking food, etc., up, and with it, if they are there, the causative coccidia. There was also a slight tendency to rickets in these birds, and I should advise giving them some cod liver oil in their mash to offset this.

C. O. B. The post-mortem examination of the chicks showed them to be affected with B.W.D. in each case. This is an infectious disease, caused by the Bacillus Pullorum, and is spread either by the breeding stock infecting the eggs, and so the chicks before hatching, or by infected chicks, or equipment and infected premises. The disease may also be carried by contaminated hands and boots from the diseased to the healthy, or from an infected place to one free from the disease. Treatment is of little avail, but spread may be prevented by thorough disinfection of all incontact equipment, the isolation of affected birds, and the elimination from the breeding pen of any survivors of an outbreak. Everything that affected birds have been in contact with is a possible source of danger, and should be thoroughly disinfected before further use.

Easter Holidays,
1925

OWING to the EASTER Holidays, Advertisements intended for our issue of 15th April must be received not later than FIRST POST Thursday morning, April 9th.

Bees.

By E. W. D. MADOC.

SPRING MANAGEMENT.

Towards the end of March, or during April, a wa
day should be chosen to make the first examinat
of the stocks. Any queen-less colonies, which n
be recognised by an entire absence of brood, sho
be united to queen-right colonies at once. To do t
remove the coverings above the frames of the colo
containing the queen, and place a sheet of newspa
over the bare frames, and make a few small holes
the paper with a pencil point, making them too sn
for a bee to get through; then gently lift the que
less stock off its bottom board, and place it on
newspaper over the frames of the other colony. T
operation should be done towards evening, or a
time when the bees are not flying freely, so that b
from the queen-less colony do not return to their
stand and become lost. After a few days the b
will tear away the newspaper dividing the two stoc
and unite peacefully. Make sure that the bees fr
the queen-less stock cannot get out except by go
down through the combs of the lower colony. So
stocks may be found to be short of stores, in wh
case syrup should be fed to supply the deficien
There are many different types of feeder listed in
supply catalogues which are more or less efficient,
they tend to be unnecessarily expensive and co
plicated. A lever lid tin, such as a Lyle's Gold
Syrup tin, with a few small holes punched in the
with a nail is quite as good as any. To use this fee
fill with syrup and invert it over the frames, when
bees will suck the syrup through the nail holes. Sy
for spring feeding should be fairly thin, about
pound of white granulated sugar to one pint of wa
is about the right proportion. Hot water should
used in mixing the syrup to dissolve the sugar m
easily, and the syrup should be given to the b
towards evening while still warm. Under some c
ditions bees take a long time to consume the syr
and occasionally it will ferment before it is all tal
from the feeder. For this reason it is advisable wh
making, to add a small quantity of some harml
antiseptic, such as Flavine, or Bacterol, which p
vents any tendency to ferment.

In the case of weak colonies, it is generally adv
able to clean the floor of the hive, otherwise
entrance may become blocked with dead bees a
debris. Strong colonies will generally do their o
house cleaning satisfactorily, but it is as well to ha
a look and clean up if there is any accumulat
present.

Supplies should have been ordered months ago, b
if this has been forgotten or neglected, send in yo
order at once. Bee-keepers would save themsel
endless worry and expense by getting their ex
supers or spare hives in time, instead of waiting un
the last minute when supply manufacturers are
their busiest with urgent orders, and the mistakes a
delays which are so common at that time are apt
be very costly to the bee-keeper.

The Internal Mechanism
of the Egg-Laying Machine.

By **J. L. ROSEDALE.**

(Continued.)

1 making up our protein we will decide to use ertain amount of animal protein in order to over the "quality" difficulty. In using inary farm foods, such as cereals, we shall of rse supply a certain amount of protein of a kind ch will satisfy part of the actual requirement, modern prices demand that we remain in a ition to include such foods as maize in the bulk our rations, so that with the present knowledge protein all we can say, from the quality point view, is that it is unsafe to rely at present irely on cereals for our supply of protein.

rom the quantity aspect alone, cereals would e us a wide protein ratio—on an average about 1 10, though this can be narrowed somewhat the use of wheat offals. Generally speaking, a tein ration in the region of 1 in 4, or narrower, ound satisfactory, so that if we are using meals h analyses similar to those above (Table I.) for meal and meat and bone meal, around 10 per t. of such meal will give us an allowance for duction as well as maintenance. We have a e information that proteins from different foods be blended together in such a way as to form atisfactory protein ration, but we have not icient knowledge of this important part of the ject with British foods to justify an attempt present, to do away with animal meals.

nother advantage of many of the available mal foods is that they furnish at the same e, not only minerals, but the right kind of erals, phosphate of lime, etc., and from that nt of view it is often more economical in the g run to use, say, 10 per cent. of meat and bone l containing 40 per cent. of ash, than 7 per t. of a meat meal containing only 3.8 per cent. ash. The only remaining point I would remind of here is, that this 10 per cent. of the mal meal is 10 per cent. of the whole ration, just 10 per cent. of the mash only.

Ve will take, for the sake of argument, that we it to feed 2 ounces of grain and (from our eed 4 ounces of total food) we shall have to two ounces of mash. We are going to provide per cent. of animal meal. We may now complete mash by making it up to two ounces in almost way we like; and, indeed, the only point re- ning to be considered is the vitamin question. 1 many cases some green food is used so that A vitamin is not likely to be short; in other es maize should form part of the ration. I eve if we remember that there is nothing to vent our making up the rest of the ration in any way, provided the total fibre content does not exceed somewhere about 3 per cent. This will limit the amount of bran, middlings and oats, though it need not exclude them altogether. We cannot, however, satisfactorily decide the make-up of the rest of our mash without taking the grain portion into consideration. For instance, if we found it advisable to feed a large amount of maize in our grain mixture, we should not want too large an amount of maize meal in the mash. A glance at the analysis table shows that the difference between the grains is very small, except that the fibre is high (9.7 per cent.) in oats. We may therefore be safely guided by the price list.

Before turning to the price list, however, we must decide whether we are going to feed one kind of grain only, or whether a mixture shall be used. Until we possess a table of the B vitamin content of foods, I advocate a grain mixture. We hear a good deal about whole grain containing enough B vitamin, but we are not sure from the literature that those who make these statements have tried all the different grains on our list. For instance, Plimmer and Rosedale found in their earlier work that pinhead oatmeal required extra B vitamin. If, broadly speaking, this oatmeal is more or less identical with oats minus the husk, it seems, to say the least, a little risky to assume that oats contain enough B vitamin.

Our price list causes us practically to exclude oats from our mixture, except perhaps in June. For July maize will be a favourite on account of the price. While we have already stated that the difference in composition between the various grains is very little, it may be pointed out that the lime and iron contents of wheat are higher than those of maize. In case we decide to use an animal meal of a low ash content, it may be as well to incorporate wheat or wheat offals into the diet.

We might make up our 2 ounces of grain in any of the following ways:—

(A) 1 oz. dari, ½ oz. wheat, ½ oz. maize.
(B) ¼ oz. wheat, ¾ oz. maize, 1 oz. dari.
(C) 1 oz. dari, 1 oz. maize.
(D) 1 oz. maize, ¾ oz. dari, ¼ oz. wheat.
(E) 1 oz. dari, 1 oz. wheat.

Any such variation may be made with security as far as we know. With regard to the make-up of the rest of the mash, we may use any mixture of offals or meals we can get cheaply. Just as we mix our grains, so with our meals. If we decide on grain mixture C we should not use maize meal in the mash, though with mixture E some meal made from yellow maize would supply a certain amount of A vitamin.

Several possibilities occur, and it would not be difficult to fill endless sheets of paper with all conceivable proportions of the different foods. I propose, therefore, having suggested five grain mixtures to give five mashes for the sake of example.

We have already stipulated that the animal meal is to be 10 per cent. of the whole diet. If we agree to feed 2 ounces of grain mixture to 2 ounces of mash we shall make a fifth part of our mash to consist of animal food. In what follows all parts are by weight.

Two ounces of grain mixture A, with two ounces of a mash made up with 1 part fish meal, 1 part bran, 2 parts middlings, 1 part maize meal, would give us an analysis of 17.75 per cent. protein, 66.6 per cent. carbohydrate, 4.1 per cent. fat, 3.3 per cent. ash, 3.8 per cent. fibre. Two ounces of grain mixture B with two ounces of a mash, 1 part fish meal, one part bran, and 3 parts middlings gives an analysis of 18.7 per cent. protein, 55.95 per cent. carbohydrate, 4.25 per cent. fat, 4.4 per cent. ash, 3.75 per cent. fibre. Two ounces of grain mixture C with two ounces of a mash of 1 part fish meal and 4 parts middlings, gives 21 per cent. protein, 62.5 per cent. carbohydrate, 5 per cent. fat, 4.95 ash, 3.9 per cent. fibre.

Grain mixture D, with mash B, gives 18.25 per cent. protein, 56.3 per cent. carbohydrate, 4.3 per cent. fat, 4.4 per cent. ash, 3.85 per cent. fibre. Equal parts of grain mixture E with a mash 1 part fish meal, 1 part bran, 2 parts maize meal, 1 part maize gluten feed, gives 18.35 per cent. protein, 58 per cent. carbohydrate, 3.85 per cent. fat, 4 per cent. ash, 3.2 per cent. fibre.

Let us examine these rations a little more closely and see if we can draw any particular reasons for their various compositions. We have in each case included our animal meal for reasons already stated. In mashes A, B and E one part bran has been suggested, because it is the cheapest food on the price list. We would, of course, like to have all bran from the pocket point of view, but we must bear in mind that real economy in a practical ration depends upon a blend between the financial and physiological questions. It is that blend that we are endeavouring to study at Wadhurst. The objections to a further dose of bran are seen at a glance from Table I. in the fibre and ash columns. Middlings contain more "food" than bran, and are as reasonable in price as other things on our lists. They are therefore included in mashes A, B and C. In A maize meal makes an appearance, though it does not in B. The reason for its appearance in A is its "food or energy" value, together with low fibre. In mash B, which is suggested for use with grain mixtures B and D, maize meal is omitted, as there is already a good supply of maize in the grain ration. In ration C maize is also well represented in the grain mixture, and bran has given place to middlings as the fibre content (3.9 per cent.) is already high enough. In mash E the presence of bran has been explained. Maize meal is in evidence on consideration of the grain mixture, and maize gluten appears on account of its price in the June and July lists.

Scientific Poultry
Breeders' Association.

Full particulars of membership will be sent by return o
application to the Secretary, Mr. Tom Newman, Th
Beeches, Rudgwick, Sussex.

INCUBATION AND ALTITUDE.

A correspondent writes to ask if the period of in
bation is affected by altitude. He says:—

> "You will remember that Oscar Smart,
> 'Inheritance of Fecundity,' puts 600 feet as
> limit beyond which fecundity declines. I rea
> that there is a difference between fecundity
> the incubating period, and that O. S. did
> deal with the latter point. There is conceiva
> however, some connection. One can hardly s
> pose altitude affects one factor only. I have
> reason to believe that either fecundity, or e
> hatchability, is, with me, inferior to my ne
> bours on lower levels.
>
> I am 700 feet up on the north slope of
> North Downs, vegetation is vigorous and ha
> and so are the chickens, but the former is
> month behind throughout the period of grow
> development and ripening.
>
> I have no reason whatever to say the sam
> chickens, except as to the period of incubat
> Here my experience is that 21 days is rare,
> days possible, and about 22-23 days normal.
>
> My experience is only of two years' durat
> but those periods have occurred both with h
> and with incubators. It is not then a questio
> the method, both nature and art agree.
> results represent quite 1,000 chicks raised in
> years, so that it cannot be attributed to freak,
> even to the weather, for last year was very win
> this year wet, but not really wintry, with
> difference in the results. I cannot suppose
> question a new one, and you will no doubt
> able to explain the matter, which has this de
> of importance that the longer period of incuba
> may indicate some defect in the birds, or t
> management, concerning which it would be
> for me to be aware, and know the remedy."

In a further letter the writer makes it clear
there is no delay in the development of the chicks,
states that so far from that being the case his L
Sussex were too precocious. All eggs go straight f
the nest to the incubator or hen, so it is not a ques
of stale eggs.

I have had some experience of hatching at a hig
level than 700 feet, but have not found it to affect
period of incubation. That question could be ea
solved by sending some of the eggs from a lower l
to be hatched. My own impression is that it is n
case of altitude, and that we must look for some o
explanation. I am puzzled to offer one. The so
clay. My first thought was the texture of the sh

erhaps some of you can offer a solution. I have had vo letters this year, in which the writers say that the itching period has been longer than usual. Why iis should be I cannot say. Where there is an excess moisture, hatching is generally delayed, but that explainable. This problem is an interesting one, id one would like to find a solution.

SOME STRAIN.

A reader writes complaining of some chicks which bought from an advertiser (not in "Eggs") at 10s. r dozen. These were advertised as 270-egg strain. a arrival they were of various ages and breeds, and ɔt he says the pure Buff Rocks, for which he paid— me being black, and others of different colours. He ants to know what he can do. What can he do? and iat can he expect? How is it possible to sell pure- ed chicks in these times at 10s. per dozen, and to y heavy advertisement charges, at a profit. The gs from which these chicks are hatched are usually cked up at about 1s. 6d. a dozen from the neighbour- g farms. What does the advertiser care about com- aints? He does not worry about repeat orders. There e always plenty of simpletons to be gulled by these vertisements, and none of them are likely to sue m in the County Court, which is their only remedy. anyone really did this he would settle without its ming into court, but he knows very well that the ances of its being done are very remote. It is ɔnderful that when this myth of the 270-egg strain s been exposed, such advertisements are pub- hed. I can understand their slipping in occasionally, t that they should appear regularly and blatantly sses my comprehension. What is the good of pealing for a square deal for the novice when this permitted? Anyone who is acquainted with present sts of production must know that chicks cannot be d at a profit at 10s. per dozen without they are the riest rubbish.

NATIONAL POULTRY COUNCIL

A meeting of the National Poultry Council will be ld in the Council Chambers, City Hall, Chester, by id invitation of the Mayor, on Thursday, 16th April, nmencing at 9.30 a.m. Special importance is ached to this meeting, in view of the resolution pro- sed by Mr. Leslie Williams, at the meeting of the uncil at Cardiff, proposing a Conference of Pro- cers, Distributors, etc., to consider the marketing eggs and poultry.

A public meeting will be held at Crewe on 16th ril, which will be addressed by the President, Mr. m Newman; Vice-President, Mr. Clem Watson; and . Stanley Street-Porter. The subjects of their lresses will be announced in a later issue.

FOOD PURCHASE SCHEME.

We have had numerous letters from our readers in erence to this scheme, and a great amount of erest is being taken.

Apparently some of the millers and corn factors in country are becoming alarmed, for we have been notified by many of our members that they are endeavouring to cut prices, and considerable reductions have been made since the scheme has been launched. Moreover, they are very particular in emphasising that the quality of the goods which they supply is first-class, and insinuating that the S.P.B.A. will not supply goods of equal quality. On that point it will be quite unnecessary for me to reassure you.

If I have one feeling of disappointment it is that those who clamoured for a scheme of this kind, and whom I know have for years been paying as much as 3s. per cwt. for certain articles, more than was necessary, have failed to combine with others, and come into the scheme. It was evolved for their special benefit. We did not expect that we should be able to assist the large commercial egg farmer, but the man with 400 or 500 head of stock, or even the one who keeps a few birds as a hobby, who we know would materially benefit if he could combine with four or five others, and buy what he needs. Further, in many cases—I may say in the majority of cases—he would be considerably better off as to quality.

Speaking personally, I cannot say that I am by any means satisfied with the scheme at present. We must do something to perfect it, and for that, in a great measure, we depend on the co-operation of our members. We are only digging the foundations now of what may be, if we have the full support of the whole of the members of the S.P.B.A., a scheme which should be of the utmost benefit to them, and may eventually lead to something much bigger.

We are open at all times to receive suggestions, and I do hope that we shall be able to secure the fullest co-operation from our members.

THE MIDLAND FEDERATION.

On Wednesday, March 18th, I visited Birmingham and distributed the prizes in connection with the Laying Competition and the Show, and read a paper on "Some Causes of Failure." Mr. Tipper occupied the chair, in the absence of Mr. P. J. Hannon, J.P., whose Parliamentary duties prevented him from doing so.

There was a large and very attentive audience, and a magnificent show of cups.

In the White Wyandotte Section the first prize was secured by Mr. H. W. Gee, whose four birds put up a magnificent performance, laying 1,097 eggs, or an average of 274.1 each; while No. 436 put up the astonishing record of 314 eggs, which, I believe, is the highest official record for any Wyandotte in this country. Messrs. Fowler Bros. were second in this section, their four birds laying 1,021 eggs. Again we have a record of 305 eggs for one bird. I have visited the Midland Test, and the conditions under which it is run are certainly not conductive to high egg production. I am referring more particularly to the exposed site. Therefore, these records are the more remarkable. Messrs. Ashbrooke and Brookes were third in this section with 819 eggs.

The Leghorns did not score so well, Councillor J. W. Thompson's four winning birds laying 822 eggs

Messrs. Hudson and Sons were second with 739, and E. M. Saul third with 774. In the R.I Reds Major Kingscote secured first position with 740 eggs, the Easton Poultry Farm second with 760 eggs, 3s. less in value, and Mrs. King third with 721.

Light Sussex did not show up extraordinarily well, Mr. F. Gardner winning with 707 eggs, followed by Mr. F. R. Welch with 657, and Mr. and Mrs. Jacobs with 613. In the "Any Other Variety," Mr. M. H. Brady did well with Anconas, winning with 746 eggs. In the Heavies Mr. H. Thomas was first with 639 eggs, with Buff Orpingtons.

The Midland Federation has done remarkably good work, and Mr. A. H. Brain, the hard-working and energetic secretary, who has done so much for the movement, was heartily congratulated when Mr. G. J Bovington announced that they were now not only out of debt, but they hoped soon to be in a position to acquire a new site for their Laying Test, and erect new and improved houses.

It has been an eight years' struggle, but Mr. Brain must be exceedingly proud to have succeeded in putting it now upon a sound foundation.

The Scientific Poultry Breeders' Association.

KEIGHLEY AND DISTRICT BRANCH.

Yorkshire Federation International Laying Test, held at Otley. First ten positions of members of Keighley Branch of S.P.B.A. for specials offered in Class C, fifth month, 6th Feb. to 6th March, 1925. LIGHT BREEDS: (1) Wm. Wharton, Keighley, eggs value £1 4s. 9¼d; (2) S. Preston, Haworth, £1 0s. 2½d.; (3) S. Hartley, Haworth, 19s. 9½d.; (4) J. H. and W. Brayshaw, Cross Roads, Keighley, 19s. 4½d.; (5) Wright and Fortune, Keighley, 18s. 9¾d.; (6) H. S. Kershaw, Keighley, 18s. 2d.; (7) B. Atkinson, Thornton, 17s. 6d.; (8) J. Paget, Keighley, 17s. 2¼d.; (9) F. Waddington, E. Morton, 16s. 9¾d.; (10) Wm. Thompson, Keighley, 16s. 7¼d. HEAVY BREEDS: (1) Alf. Sawyer, Crosshills, Keighley, £1 7s. 6½d.; (2) Mrs. Hawkesworth, Pool, £1 7s. 2d.; (3) H. Downsbrough, Bradshaw, £1 4s. 6½d.; (4) J. Brown, Glusburn, £1 4s. 3d.; (5) Wright and Fortune, Keighley, £1 2s. 4¼d.; (6) H. Downsbrough, £1 0s. 2½d.; (7) Miss Taylor, Cullingworth, £1 0s. 0½d.; (8) C. Macaulay, Keighley 18s. 0½d.; (9) Tom Marks, Somerset, 17s. 3½d.; (10) Mrs. Barker, Cullingworth, 15s. 2d.

An Egg Show was held in the Temperance Hall, Keighley, on Wednesday evening, March 18th, which proved the most successful yet held. Mr. A. J. Moore, York, was the judge. Awards were as follows:—Brown Hatching Eggs: 1st and special, S. Preston, Haworth; 2nd, Miss Horner, Sutton-in-Craven; 3rd, Ed. Hodgson, Oakworth. Tinted Hatching Eggs: 1st, Mrs. Wilson, Denholme; 2nd, J. H. and W. Brayshaw, Cross Roads, Keighley; 3rd, G. Davy, Sutton. White Hatching Eggs, 1st and special, Frank Snowden, Cowling; 2nd, N. Hiley, E. Morton; 3rd, Mrs. H. Wilson, Cross Roads. Duck Hatching Eggs: 1st, 2nd and special, Mrs. Wilson, Denholme; 3rd, J. H. and W. Brayshaw. After awards had been made the eggs were sold for the benefit of the Society and realised the sum of £5 1s 9d., the highest price paid was 11s. for six Black Leghorn eggs from Mr. Frank Snowden; Mr. Alf. Sawyer was the purchaser. After the sale of eggs Mr. Moore gave an address on "Egg Production," and gave details of a proposed Egg Depot for Yorkshire. Mr. H. Walker, Marley Brow, also spoke in support of the egg depot scheme, and gave some hints on egg preserving. Mr. Frank Snowden presided over the meeting, which was well attended.

Correspondence.

FOOD PURCHASE SCHEME.

To the Editor of "Eggs."

Dear Sir,—The one point that has been m
consistently emphasised by our secretary in c
nection with the above scheme is the necessity
forming groups to handle lots of not less than t
tons. This may be a simple matter for well-kno
members in certain districts, but there are pr
bably many who, like myself, do not know of
single member in the immediate neighbourhood
approach on the matter. My small-holding
situated at Garston, Herts, on the main road fr
Watford to St. Albans, and if there are any fell
members in the vicinity who contemplate enter
the scheme perhaps they would communicate w
me, with a view to arranging a meeting to disc
the question.

In regard to prices, I beg to suggest that th
should be given ex warehouse as well as F.O.
as it appears to me that in many cases if the m
chandise is going to be consigned by rail,
freight, plus handling at forwarding and receiv
stations, and cartage to destination, is going
eat up all advantage of cheaper purchasing.
on the other hand, complete lorry loads can
arranged for by the purchasers, and the vari
consignments dropped off en route, I think c
siderable economy could be effected. Further,
this method we should obviate the necessity
dumping the whole order in one central deposit a
then having to remove same in separate lots.

The crux of the whole matter is the lack
friendly combination amongst the individual me
bers, and what we require is the establishment
groups in every town, village or district, and me
ings arranged, say, once a month to discuss w
and means of helping ourselves (by co-operat
with the parent society) instead of maintainin
splendid isolation, and looking to the Commit
of the Association to do everything for us.

Even at the risk of being accused of asking
"spoon-feeding" (of which we have heard seve
times lately), I venture to suggest that here i
specific case where the large and well-establis
poultry-keeper can assist the smaller producer
combining with him when ordering foodstuffs, a
thus getting the advantage of buying in lar
quantities and also effecting economy in transpo
For example, in most neighbourhoods there
one or two large poultry farmers who must p
chase their foodstuffs in considerable quantiti
and it surely would be feasible to arrange
several separate orders for smaller men to be
cluded with their large order, and the whole c
signment loaded on to one lorry and delivered

various addresses in the neighbourhood, which he most, I presume, would be four or five, ting of a two-ton load.

Yours faithfully,
H. W. SMALLMAN.

WHITE BRESSE CLUB.

ear Sir,—Further to my previous letter on this ect, may I be permitted through your columns to e the following proposals for settling this unfor- ite dispute?

That as the majority of breeders of the White ety, irrespective of definite grievances, seem to re a club of their own, the newly-formed White sse Club be accepted as *au fait accompli*.

That a sub-committee of both clubs be appointed nify the standards of the two clubs in so far as affect each variety in common; these standards sequently to be submitted to the Poultry Club.

To let byegones be byegones, and the two clubs fect a friendly co-operation in matters which affect breed as a whole, such as the organisation of sec- s at laying tests and the education of the public eneral, and the salesman in particular, of the table its of the breed.

would beg that these proposals be submitted to the mittees of both clubs, and an *official* reply given hese columns, so that private members and those rested in the breed can decide on the course of on which they wish to take.

Yours faithfully,
A. H. CAPPER.

-OPERATIVE POULTRY PRODUCTS, LTD.

ear Sir,—May I reply to the reference to Co- rative Poultry Products, Ltd., mentioned in your e of the 18th inst., from Mr. A. Colombe? e rightly states that no news has been pub- ed for many months in regard to this Society's rations. The explanation is that building de- are responsible for the lapse of time before ls can be taken, but he will be glad, as a mem- of C.P.P., Ltd., to hear that it is proposed ommence taking birds towards the end of next th, full notice of which will be sent to him, as as to all other shareholders.

e will also be interested to know that the iety is very much alive, and, although the ltry side could not be started when anticipated, Society took up the disposal of eggs from its reholders, on lines new to this country. To t end, the committee of this Society considered ecessary for them to send certain members of staff to study at first hand conditions obtaining enmark and Holland, in regard to egg handling marketing.

he result of the operations to date cannot but considered gratifying, as the turnover at pre- t is £1,500 per week and is increasing. It will, ourse, be considerably higher as soon as birds be taken.

In regard to the last paragraph in his letter, we cordially agree with him that before starting new societies, existing ones should be supported and made to work.

To that end, the Chairman of C.P.P., Ltd., and I attended the original meeting called at Anderton's Hotel in London, by Mr. Atkins, and suggested that instead of forming another society, that meeting should consider joining up with C.P.P., Ltd., who had already gathered valuable data in regard to Egg Preserving. A unanimous resolution was then passed that the Committee formed from that meeting should meet the Committee of C.P.P., Ltd., in order to formulate a concrete scheme.

We have not heard anything further from Mr. Atkins, and it would appear that this unanimous resolution has been passed over, and it is intended to form yet another society, as evidenced by the letter from him in the same issue of your paper, i.e., March 18th. Yours faithfully,

pp. CO.-OPERATIVE POULTRY PRODUCTS, Ltd.
EDMUND SCHOLES, General Manager.

COMMUNITY POULTRY FARMING.

Dear Sir,—Mr. Hall seems to have stumbled over the same error as others who have banned groups and societies in business undertakings.

Because each individual wants things done his way, there is naturally consequent disagreement and failure. What does this point to? The answer is the key-note of all successful enterprise—it is ORGANISATION.

Given a good **Business Man** (not an experienced poultryman) you will have a **Business Proposition.**

With a good manager, almost any sort of concern with any pretensions, or promise, at all will go ahead.

Why is the idea of Community Poultry Farming so much discussed at the present moment?

Because Mr. Hall's man, who has exercised his own individual liberty in the conduct of his poultry farm, is not making the progress commensurate with the amount of work and capital expended.

The difficulties which are constantly barring progress are:—(1) Dear food. (2) Low price of eggs and poultry. (3) Expense of labour.

Combination means:—(1) Cheaper food. (2) Better prices for eggs and poultry. (3) Minimised labour.

Result: A living profit.

Yours truly, A. MORTON NANCE.

COMMUNITY POULTRY FARMING.

Dear Sir,—There are a few errata in my letter on page 186, due to my very bad penmanship no doubt. Two and a half or three acres should be two and a half or three *years*. Outside two roof asbestos should be *a roof* asbestos; ¾in. thick should be ¼in. thick unfinished inside. Later on. complete the insides of two rooms at back end.

I have now good reason to believe that a subsidy of £6 a year for 20 years will be obtainable. See Circular 520, Ministry of Health, 1924, post free for 3d. from the Stationery Office, Kingsway, W.C.2, pages 14, 15, and 17.

I do not follow Mr. W. Hall in his statements that a man would sacrifice his personal liberty because he bought ten acres of land adjacent to other poultry farmers. He would have congenial neighbours, a perfectly free hand as to what he joined them in doing, and surely amongst eight persons some would specialise in one way, some another.

What is the New Food Purchase Scheme, Egg Selling, and Pickling Schemes, Co-operative Poultry Products, etc., but a form of Community Dealing?

Yours faithfully,

T. N. DARE.

THE THYROID GLAND AND EGG PRODUCTION.

Sir,—Recent work has shown that the administration of the extract of thyroid gland to old hens is followed by definite rejuvenation and an increased egg yield. For example, a six-year-old White Leghorn hen, which during the three year period previous to the experiment, had laid only 25 eggs, produced 129 during the year when thyroid extract was given.

This work suggests that from the point of view of the breeder who specialises in eggs it may be a profitable practice to give as a routine measure thyroid extract to his layers during the second and third years. This powder could be given with the mash, as spice is given.

It should be noted that I do not advocate this practice; I merely state that under experimental conditions the administration of thyroid extract was followed by the exhibition of certain definite beneficial effects, and suggest that it may be worth while testing this matter further.

If any of your readers would care to follow this matter up it would be necessary to use trap-nested birds in their second or preferably in their third year. Their egg records must be known. Two pens would be necessary. Twenty or twenty-five hens would be fed on the ordinary ration; another twenty or twenty-five related hens of the same age would get the ordinary ration to which would be added thyroid extract, roughly 0.03 gms. of dried thyroid per bird.

I shall be delighted to give further information to any who care to write to me.

Yours, etc.,

F. A. E. CREW.

The Scientific Poultry Breeders' Association.

APPLICANTS FOR MEMBERSHIP.

Stacey, Miss C. E., 13, Woodlands, Combe Martin. N. Devon.
Gregson, James, 84, Rufford Road, Crossens, Southport.
Thomson, J. Stewart, Conagher, Ballymoney, Co. Antrim.
Wilson, Miss J., Minorca Farm, Denholme, Bradford.
Anderson, Joseph, Carnaveigh, Crieve. Ballyboy, Co. Monaghan, Ireland.
Waldie, Frederick, "Fellside," Darras Hall, Ponteland, Northumberland.
Hopkins, Miss A., "Felix Caravan" P.F., c/o Hook Road P.F., Surbiton, Surrey.
Vontom, A., The Bays, New St. John's Road, Jersey, C.I.
Poole, Wm.. Penzville Farm, North Level Gate Crossing, Thingangyun, Burma.
Charnock, J. E., 26, Stanley Road, Liverpool.
Grayson, J., 77a, Knowsley Road, Bootle, Liverpool.
Haybittel, K. B., "Woodside," Headcorn, Kent.
Brock, C. Holt-, Deerleap Farm, Knockholt, Kent.
Housden. A. E., Maple P.F., Dane Bridge, Much Hadham, Herts.
Wragg, A. E., 142, Knighton Fields Road East, Leicester.
Worssell, J., Slindon Cottage, Links Road, Ashstead, Surrey.
Sutor, R. Macdonald, Greenway Court, Hallingbourne, Kent.
Streatfeild, Mrs. G., Cottage-on-the-Hill, Westerham, Kent.
Widdas, Rev. C., Shiney Row Vicarage. Philadelphia, Co. Durham.
Pickles, E., Castle P.F., Stansfield, Todmorden, Yorks.
Moyle, Miss C., 72, Newton Street, Millom, Cumberland.
Lees, G., Tan Llan Farm, Llanelian, Colwyn Bay, N. Wales.
Hennessy, Miss M. K.. Rathcullin, Kells, Thomastown, Co. Kilkenny.
Clarke, H. S., "Garwood Lodge," Rawreth, Battlesbridge, Essex.
McIntyre, Peter, Craigallan P.F., near Armadale, Linlithgowshire.
Cantrill, S., Excelsior Cottage, Old Mill Lane, Forest Town, Mansfield, Notts.

Poultry Farmers and Income Tax.

The National Poultry Council reports that in several fu cases heard by Special and Local Commissioners for Income decisions have been given that poultry farming is Husba within the meaning of the Finance Acts, and, therefore, sh be assessed under Schedule B., that is, on the basis of Re Whilst notice of appeal has in some cases been given, gene the Inland Revenue Authorities have accepted such decision applying to the current year.

The question, however, cannot be regarded as finally se until a case is decided in the High Court of Justice. The In Revenue have given Notice of Appeal in an important case, w it is anticipated may shortly be heard. The National Po Council has agreed to contribute from its Legal Defence towards the defence of this action, in the interests of po farmers all over the country, and the National Farmers' U have agreed to bear part of this financial responsibility. In meantime, the Inland Revenue have agreed to cases stan over until such decision is arrived at. It is recommended, t fore. that wherever the Income Tax Authorities are pre for payment under Schedule D., application should be mad Poultry Farmers for payment to be held over until the referred to above is decided. Should such not be agreed t matter may be reported to the National Poultry Council, Essex Street, London, W.C.2.

The attention of poultry keepers all over the country is he specially called to the importance of contributing to the L Defence Fund of the National Poultry Council. which is a inadequate to meet heavy legal charges. Should the decisio adverse to poultry farmers, it may be necessary to carry case to the House of Lords. It need only be pointed out th poultry farms were to be assessed under Schedule D. that w mean taxation amounting to scores of thousands of pounds year. To prevent this is a protective measure which shoul the responsibility of all concerned. Contributions to the L Defence Fund should be sent to Mr. A. H. Brownson, Secre Treasurer, The Bungalow, Lutterworth Road, Nuneaton.

RATING OF POULTRY FARMS.—Although in a large nu of cases local rating authorities have agreed to the asses of poultry frams on the agricultural basis, in other insta demands are being made to compel payment on the higher s Two instances have recently been reported of successful app one upon the Essex County Council's Small Holding Estat Weeley, in which the Local Assessment Committee, after r sideration, agreed that the land of a poultry farmer, apart the buildings, should have the benefit of the deduction of t quarters under the Agricultural Rates Act. Another cas Hertfordshire, upon a holding of six acres with fruit t where there were fifteen poultry houses and a large food she reported, in which the Local Assessment Committee agreed the land was to be assessed at one quarter the full rates.

URBAN POULTRY KEEPING.—The National Poultry Co reports that in several instances Local Health Authoriti urban areas have recognised the importance of permitting u try keeping under suitable conditions, and have adopted r tions which, whilst protecting public health and preventing ance to neighbours, have provided that fowls may be kept u these conditions in order to stimulate home food production

It is necessary, however. to again call the attention of pou keepers to the fact that houses must be of a suitable chara that the number of fowls shall be strictly limited in accord with the area available. and that absolute cleanliness sha maintained. In several instance reported to the National Po Council it has been evident that the Local Authorities were justified in taking action owing to the bad conditions under w the poultry were maintained. Local Poultry Societies ca much to improve the methods of poultry-keeping in their re tive areas.

SALE OF DISEASED BIRDS.—Following upon notice previ issued, the National Poultry Council has received reports considerable number of cases of birds being sold which suffering from contagious diseases, and is urging that steps be taken to prevent such action, and, if possible, that selling diseased birds shall be prosecuted. Purchasers of po should, immediately birds are received, make careful examina and if there are any signs of disease, return them at once t vendors. Although railway companies have the power to r transit of poultry that are in an unhealthy state, it can sca be expected that these should be required to examine such before accepting them. In some cases where birds have been back there has been difficulty in obtaining return of the m paid. There can be no doubt whatever that if buyers of adopted the Deposit System provided by some of the le societies and newspapers, this would be most effective in pre ing vendors from sending out fowls suffering from disease. fact of anyone advertising birds for sale, often at a cheap is no proof that they are responsible persons, and, except i case of well-known breeders, the deposit should always be use of.

ARLY THIRTY THOUSAND SUBSCRIBERS SUPPORT MIDLAND FEDERATION PRIZE FUND SCHEME.

he second Mammoth Prize Fund Scheme, organised by the land Federation of Feather and Fur Societies, was concluded Wednesday evening last, when Mr. Tom Newman, after ributing Prizes, Cups, Medals, and Cheques to the successful petitors of the Fifth Midland Laying Test and the Sixth land Poultry Festival, also announced the principal winners he Prize Fund Scheme.

e announced that the exact number of tickets subscribed was magnificent total of 29,881, and the subscriber who had essfully forecasted this number was Mr. A. Williams, of nsley Hall, Bromsgrove. The remaining 499 prizes were won the next nearest forecasts to this number, the principal rds being as follows:—

Estimated Winning No.—Winner.—Prize.

1—A. Williams, Barnsley Hall, Bromsgrove—"Rover Car."
2—E. Roberts, 7, Railway Terrace, Nechell, B'ham—3-Piece Suite of Furniture.
9—A. Godley, 14, Emmett Carr, Renishaw, Chesterfield—Bicycle, value £10 10s.
9—J. Nixon, Birkby Hall, Cark in Cartmel—1 60-Egg Size Glevum Incubator.
9—J. Usher, Plashetts, Northumberland—1 60-Egg Size Gloucester Incubator.
8—S. J. Herriman, 4, Frog St., Bampton, Devon—1 60-80 Vitex Foster Mother.
4—Geo. Morgan, 99, Varna St., Edgbaston—1 60-80 Vitex Foster Mother.
7—T. L. Ward, Cokhay, Repton, Derby—1 Vitex Oat Sprouter.
7—M. Austin, 36, Winchester Rd., Pendleton, Manchester—1 Vitex Oat Sprouter.
7—W. H. Brady, Glan-y-Coed, Penmaenmawr—1 Patent Spraying Machine.

r. Newman congratulated the Midland Federation on the llent result, and hoped that their work would be more cially secure in the future and admitting of wider scope for undoubtedly beneficial work, particularly among small ry-keepers of Birmingham and the Midlands.

e remarks were well supported by Mr. Laurence Tipper, rman of the Birmingham Chamber of Agriculture, who asised the need for such educational work and help as being disseminated by the Midland Federation. Mr. M. H. y, Chairman, expressed himself as being highly gratified e splendid support given by poultry enthusiasts all over the try. It was very evident that even if the Midland Poultry val, which they had just promited, had caused severe cial loss, exhibitors and the friends were determined that it d not cease, and much financial help had been attracted se of this.

ny thousands of letters had also been received from breeders others testifying to the need of the "Eat More Eggs" augn, and hoped the Midland Federation would have a y sum to hand over to this fund of the National Poultry cil in readiness for a campaign that would improve and lise prices for eggs during those seasons of the year when ction tended to be more than the average demand.

. Albert H. Brain, the Hon. Organiser, publicly thanked all present, and thousands of other subscribers in all parts e country, including many American and Continental friends, had wrote him letters of substantial encouragement to go on the work. He said it had given him great heart, and te many pessimistic influences he and his staff of helpers, ding Miss Shuker, the General Secretary, who had per-d prodigiously in forcing their way, often working day night together, and they hoped to be in a position to further ve their activities in the future.

number of the affiliated societies had seceded from the ation because of the financial burden which had to be d, yet he was pleased to say that four new branches had formed recently in Walsall, Yardley, Kings Norton and erhampton, while another dozen localities were only wait-o be visited and new branches formed there.

th good spirit and loyalty the movement must be a pro-ve one, and, in closing, Mr. Brain intimated that he had his promise to the Federation made many years ago, to see it through and clear them entirely of the financial obligation. Now that this had been done he would in all probability resign and leave the carrying on of the work to others who were better inspired, and might meet with more success in consolidating the federated movement he had enjoyed so much in working for so many years. Much remained to be done that could now be done, and the time had come when Mr. Brain would have to look after making some provision for his own family. He could not go on any longer giving pretty well his whole time and paying his expenses, which during the eight years he had organised the Federation work had cost him well over five hundred pounds in out-of-pocket expenses alone.

The evening closed with enthusiastic scenes, and no little part of it was due to an excellent address by Mr. Tom Newman on "Some Causes of Failure."

London Market Advice Table,

By A. V. CLARKSON.

APRIL, 1925.

From this month onwards every member of the S.P.B.A. should cast his eyes round his farm, and his mind towards the market. His energies will be devoted to realising on the outlay of his capital on his produce, and that has got to be marketed to the best advantage, bearing in mind one of my parrot cries that "Anyone can produce, but few can sell."

Every producer should have some market knowledge, although it is possible in many cases to dispose of produce locally to more advantage than sending it to London. Even so, the man that has the knowledge of the market value of his produce is in a better position to sell his produce locally than the man who has not that knowledge. A producer, who does not know the market value of his birds, is placing himself at the mercy of the higgler or dealer, and these latter folk get their living from their market knowledge and the ignorance of the producer.

As I said last month, it only costs a 1½d. stamp to write and ask the approximate value of your produce, or whether it is a good time for marketing.

PETITS POUSSIN.—These are now in steady demand. Many members still seem unaware of the manner and method of marketing this class of bird. The demand is for a bird scaling not less than 12 ounces and not more than 20 ounces. They should be killed and clean plucked (including stubbing), BUT NOT TIED DOWN OR DRAWN. They should then be nicely packed in boxes or trays, each containing one dozen. Use green reeds or leaves for packing, if obtainable. If sending these birds alive, it is futile to send birds scaling less than one pound, because the small birds do not travel well, nor do they pluck out nicely after travelling.

HENS.—This month sees the Jewish Festival, when old hens, providing they are fat, and scale 4½lbs. or over, realise slightly higher prices than usual. Being for the Jews, they must be sent alive. Senders who have large quantities should grade their hens in the different crates, and so facilitate the salesman's chance of obtaining top market price.

DUCKLING.—The only duckling in demand on the London Market is one that is white, and scales 4lbs. or over when killed and clean plucked.

EGGS.—Since last month eggs have risen slightly, and seem fairly firm. They should rise a little for Easter, but it is anticipated that after Easter they will take a further drop until scarcity causes them to rise again.

PLOVERS' EGGS.—Any member, who lives in a district where plovers' eggs are obtainable, should bear in mind that there is a heavy demand for them on the London Market for this month and next. Seeing that they cost nothing except the carriage to London, it will pay them to get to work. It will hardly pay to send less than one dozen, and they should be packed in BRAN, because they are so fragile, and a dozen or two can be sent by parcel post so packed.

The question of the effect of the Wild Birds' Act is rather confusing, because plovers' eggs are a normal marketable commodity openly sold on the London Market, and served in all London hotels. English and Scottish supplies are augmented by large consignments from Holland.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, MARCH 27th, 1925.

GRAIN AND FEEDING STUFFS.—Moderate supplies of English wheat meet a very slow trade, and prices have again declined in sympathy with the further fall in foreign wheat values. Good milling samples of British wheat now average 12s. 8d. as against 13s. per cwt. a week ago. Average quotations for imported wheats record reductions of 3d. to 1s. 2d. per cwt., but the market at the close of the week was steadier and rather more trade was passing at the lower prices then ruling. English feeding barley is in dull request at lower values, and imported descriptions mostly sell at slightly easier rates. Home-grown oats are unchanged, but imported, with a quiet demand, are reduced in price. Maize values have fluctuated during the week but average quotations are unaltered, except at London, where prices are lower.

Trade for offals is slow, and bran is cheaper at Bristol and London. Meals also meet a quiet trade, and barley and maize meals are again reduced in price. Linseed cake (9 per cent. oil) sells at less money, and at Bristol and Hull prices have declined 5s. per ton on the week.

MILLERS' OFFALS.—Bran (British): Bristol, £9; Hull, £8 2s; Liverpool, £8 5s; London, £7. Broad Bran: Hull, £9 12s; London, £8 15s. Middlings—Fine (Imported): London, £9 7s; Coarse (British): Bristol, £9; Hull, £8 10s; Liverpool, £8 5s; London, £7 15s. Pollards (Imported): Bristol, £7 5s; Hull, £7; London, £7 5s. Rice Bran: Bristol, £10; Liverpool, £9 2s. MEAL.—Barley Meal: Bristol, £12; Hull, £12; London, £12 5s. Maize Meal: Bristol, £10 15s; Hull, £10 12s; Liverpool, £10 12s; London, £11. Maize Meal (S. African): Bristol, £10 10s; Hull, £10 10s; Liverpool, £9 10s. Maize Germ Meal: Bristol, £10 10s; Hull, £10 10s: London, £9 10s. Maize Gluten Feed: Bristol, £12; London, £10 5s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 10s; Liverpool, £10; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 18s; London, £13 5s. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £19; London, £21.

EGGS AND DEAD POULTRY.

Full supplies of eggs are offered, but the demand has been quiet, with prices ruling in favour of buyers for all except the cheaper grades. Dead poultry generally is an inactive trade, although best chickens sell readily.

Week-end Prices—Eggs (per 120): British, 13s 6d, 12s 6d; Irish, 13s 0d, 12s 6d;Danish, 14s 6d, 14s 0d; Dutch, 14s 3d, 13s 6d; Styrian, 12s 3d, 11s 3d; Egyptian, 9s 9d, 9s 3d; Belgian, 13s 3d, 12s 9d; Italian, 13s 0d, 12s 6d; Chinese, 13s 6d, 12s 0d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 2d, 1s 9d; Irish, 1s 7d, 1s 2d; Others, 1s 10d, 1s 5d. Ducks, 1s 11d, 1s 4d. Geese, 1s 3d, 1s 0d. Turkeys, 1s 7d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 1s 4½d; Second, 1s 3d. Birmingham: First, 1s 4¼d; Second, 1s 3½d. Bridgwater: First, 1s 5d; Second, 1s 3½d. Chelmsford: First, 1s 4¾d; Second, 1s 3d. Doncaster: First, 1s 6d. Dorchester: First, 1s 1½d. Exeter: First, 1s 4d. Hereford: First, 1s 2d. King's Lynn: First, 1s 3d; Second, 1s 0d. Llandilo: First, 1s 2d; Second, 1s 0d. Mold: First, 1s 1d; Second, 1s 0d. Montgomery: First, 1s 1d. Newport (Mon.): First, 1s 2d; Second, 1s 1d. Norwich: First, 1s 2d. Oswestry: First, 1s 1d. Penzance: First, 1s 0d; Second, 11d. St. Ives (Hunts): First, 1s 2½d; Second, 1s 1½d. Skipton: First, 1s 5d. Truro: First, 1s 1d. *Carlisle: First, 1s 2d. *Derby: First, 1s 6d. *Ipswich: First, 1s 6d; Second, 1s 4d. *Lincoln: First, 1s 6d. *Shrewsbury: First, 1s 2d; Second, 1s 0d. *York: First, 1s 3d; Second, 1s 2d.

FOWLS.

Per lb.—Birmingham: First, 1s 7d; Second, 10d. Doncaster: First, †5s 0d. Exeter: First, 1s 9d. Hereford: First, 1s 9d. Llandilo: First, 2s 1d; Second, 1s 8d. Newport (Mon.): First, 1s 7d; Second, 1s 3d. Truro: First, 1s 5d. *Derby: First, †6s 9d; Second, †4s 0d. *Ipswich: First, 1s 8d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury :First, 1s 5d; Second, 1s 3d. *York: First, †5s 6d; Second, †4s 6d.

DUCKS.

Per lb.—Exeter First, 1s 6d. Llandilo: First, 2s 1d: Second, 1s 8d. *Ipswich: First, 1s 7d.

* At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. † Per head.

We frequently receive complaints from our readers to the effect that when replying to advertisers, letters are often returned owing to the address given in the advertisement being insufficient. For the sake of both our readers and advertisers, we would therefore ask every advertiser to have as full an address as possible inserted in all announcements.

“Eggs.”

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, April 1st, 1925.

CONTENTS.

EDITORIAL 20
GLAMORGAN COUNTY EGG-LAYING TRIALS 21
THE USE OF POULTRY AGAINST FARM PESTS 21
“DAILY MAIL” EGG-LAYING TESTS 21
ST. DUNSTAN'S WINTER EGG-LAYING TESTS 21
ANSWERS TO QUERIES 21
POST-MORTEMS 21
BEES 21
THE INTERNAL MECHANISM OF THE EGG-LAYING MACHINE 21
S.P.B.A. ... ... 218 and 22
CORRESPONDENCE 22
POULTRY FARMERS AND INCOME TAX 22
MIDLAND FEDERATION PRIZE FUND SCHEME 22
LONDON MARKET ADVICE TABLE 22
MARKET REPORT 22
BOARD OF AGRICULTURE FOR SCOTLAND EGG-LAYING TEST 22

Contributions.—The Editor will always be pleased to conside contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence o “Eggs” to their poultry-keeping friends.

Subscriptions to “EGGS,” 12s. 8d. per annum; 6s. 4d. for si months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, Th Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches Rudgwick, Sussex.

All communications with regard to Advertisements should b addressed to Mr. S. H. Burles, “Eggs,” 94, Farncombe Street London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first pag of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of “Eggs,” it i imperative that new advertisements and alterations are receive by FIRST POST ON FRIDAY MORNING to ensure insertion in th following Wednesday's issue. It is hardly necessary to add tha the earlier in the week we receive copy the better it is for every one concerned.

PROOFS.

We cannot guarantee to submit proofs unless com plete copy is to hand by FIRST POST ON TH MONDAY PREVIOUS TO THE FOLLOWIN WEDNESDAY WEEK'S ISSUE.

BOARD OF AGRICULTURE FOR SCOTLAND.

EGG-LAYING TEST, 1924-25.

Egg Production of Leading Pens at end of Fifth Period— 3rd March. 1925.

Figures are Eggs and Points respectively.

Section 1. White Leghorns.—J. Prentice, Loancroft Poultr Farm, Uddington, 514, 509; J. W. Double, Maderia Villa, Serpentin Road, Rothesay, 511, 479; J. and W. Purdie, Poultry Yard Lanark, 493, 473.

Section 2. White Wyandottes.—R. A. Oliver, Boarhills, Fif 481, 478; B. Bradbury, Tottington, Bury, 522, 452.

Section 3. Rhode Island Reds.—Mrs. Logan, Kirkland, We Kilbride, 487, 485; H. P. Roche, Ardear Poultry Farm, Stevenston 482, 480.

Section 4. Non-Sitters, other than B. Leghorns.—R. Sco Hiller, Uddingston, 379, 379; A. Watson, Manor House, Mountai Cross, West Linton, 378, 378.

Section 5. Sitters other than in Sections 2 and 3.—J. Adam Onca Poultry Farm, Cleland, Lanarkshire, 488, 488; O. C. Brown Appleby, Scunthorpe, Lincs., 425, 425.

Section 6. Ducks.—H. S. Godsmark, Sellindge, Ashford, Ken 530, 485; Miss Harrison Bell, Sisservernes Poultry Farm, Welwy Herts, 324, 301.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, APRIL 8th, 1925.

Editorial.

SELLING EGGS BY WEIGHT.

any of our readers have written expressing r opinions on this subject, and the majority decidedly favourable to the proposal. Whether consideration has been given to the difficulties cannot say. The subject has been discussed atively for a number of years, but we have r had a " full dress " debate as to whether producer would really benefit or not, and we ld much like a fuller expression of opinion.

e of our correspondents has asked, if carrots, ips and potatoes are sold by weight, why not s? In his opinion this is unanswerable, but e are others who can see the other side of the tion.

e wonders whether the producer ever fully ses what is lost in the marketing. As one of readers puts it :—

"I sincerely believe that the marketing of one's produce is the chief strut in the margin which makes the difference between profit and loss at the year's end."

e would not go quite so far as that, but its rtance and the general failure to recognise it ne can dispute.

e same correspondent, writing further on this ect, says :—

" Selling eggs by weight—that, is, putting weights on one side of the scale and eggs on the other—I do not think practicable. I know of no other so easily broken article which is put into the scales, and I do not believe we shall ever persuade the egg retailer to adopt such methods. But there are other ways. Your correspondent grades his eggs and accepts less for the eggs under two ounces but lets the eggs over two ounces pass free, which, in the words of Euclid, is absurd. I grade my eggs into four sizes—$1\frac{3}{4}$ oz., 2 oz., $2\frac{1}{4}$ oz., and $2\frac{1}{8}$ oz.—and, taking the basis as 2d., when two-ounce eggs are twopence, I get $1\frac{3}{4}$d. for $1\frac{3}{4}$ oz., $2\frac{1}{4}$d. for $2\frac{1}{4}$ oz., and $2\frac{1}{8}$d. for $2\frac{1}{8}$ oz. In the autumn and winter I sell $1\frac{1}{2}$ oz. eggs on the same basis for $1\frac{1}{2}$d. I am fair with my small eggs, but I get justice for my large ones. I am sending away just now about 6,000 eggs per week, and the majority of them are over two ounces, so you will see the pull I am getting in addition to the 2s. 6d. per 120, as quoted in the ' Telegraph.'

Now I want to get down to brass tacks. My eggs go to certain firms, and the basis of my contract is as above. Other producers who supply these firms with eggs get no benefit from eggs over two ounces. These firms want to bring me into line with their other producers at the end of the season. I want to bring the other producers into line with myself. My method of selling is fair ; the firms admit this, but they say I am getting too much money, and I must come into line. I will hold out to the end. Now I want you and ' Eggs ' to support this method of selling for all you are worth. You will see the reason and the logic of it, and if all the producers connected with our Association will subscribe to this method of selling, and demand it, we shall have won a big victory, and I shall not be let down when the autumn arrives, and I have to make another contract for selling my eggs. In my opinion, the wholesale and retail selling of graded eggs, as above, is the soul of selling eggs by weight—no messy shop scales with broken eggs in them."

We think our readers will appreciate the argument put forward by our correspondent. As it is at the present time, the producer is penalised for his small eggs, and does not get full value for his large ones.

The whole point of this letter, however, appears to us to be that the firms with whom the contract is made, while not disputing that the method of selling is fair—in fact, admit it—complain that the producer is getting too much money and must come into line with others. What is meant " by getting too much money "? Do they mean to say that they are not getting a sufficient margin of profit? We hardly think that is the case. It is more probable they do not like paying one man a higher price for the same number of eggs than they do another. We believe a number of these contracts are made on the basis that a $1\frac{3}{4}$ oz. egg is not worth so much as one weighing 2 ozs.; but if that is the case, why should a 2 oz. egg be worth as much as one weighing $2\frac{1}{4}$ ozs.? Our correspondent is, by his method, enabled to get a far better price for eggs than the average producer does. Further, the firms with whom he has made his contract admit the fairness of this method of selling.

Having obtained that admission, their only object in wishing to bring him into line with other producers is that they should obtain a greater margin of profit; but, assuming our correspondent can get the support from other producers, why should we not succeed in forcing these firms to accept this method of sale?

It seems to us that our object should, to some extent, be to do away with the competition between producers, and, before next season's contracts are drawn up, endeavour to find some scheme whereby the competition between the large commercial eggs farmers should be reduced to the minimum, and one method of sale adopted for the whole.

As we stated a week or two ago, we know one firm who in one district have fixed three different prices in their contracts. Surely this should cause us to think furiously, and to give careful consideration to what our correspondent has written, and to see whether some scheme cannot be arrived at whereby we could put an end to this competition between the egg farmers themselves and endeavour to arrive at one method of sale, by which they could realise a higher value for their produce?

HARPER-ADAMS' AGRICULTURAL COLLEGE, NEWPORT, SALOP.—POULTRY LAYING TRIALS, 1924/1925.

REPORT FOR THE FIFTH PERIOD.

The fifth period of the trials ended on 20th March, and the high level of production reached in the previous periods of the trials has been maintained, the individual average being a fraction under 19 eggs per bird. The health of the birds continues very satisfactory.

There is only one change in the premier positions, the Co-operative Wholesale Society's Anconas taking the lead over Messrs. Storer Bros. pen of the same breed in the "Any Other Light Breed Section." There have been a few changes in the lesser leading pen positions.

SUMMARY OF THE LEADING PENS.

CHAMPIONSHIP TRIALS.

Section 1.—Light Breeds.—A. White, Malpas, Cheshire (B.L.), 856 eggs; Frank Snowden, Keighley, Yorks (W.L.), 793; Miss N. H. Bell, Ightham, Kent (W.L.), 855.

Section 2.—Heavy Breeds.—W. Lister, East Sussex (L.S.), 972 eggs; E. Watson, Colne, Lancs. (W.W.), 926; G. B. Metcalfe, Lechlade, Glos. (W.W.), 926.

SMALL FLOCK TRIALS.

Section 1.—White Leghorns.—W. McMahon, Newton Mearns, Renfrewshire, 604 eggs; J. & W. Purdie, Lanark, 578; F. A. Walch, Cheltenham, 557.

Section 2.—White Wyandottes.—D. W. Gunston, Bramdean, Hants, 666 eggs; Allen Bros., Harrogate, 584; Frank Snowden, Keighley, Yorks, 571.

Section 3.—Rhode Island Reds.—F. & A. H. Sanders, Lutterworth, Rugby, 565 eggs; Mrs. Jellis, Rugby, 501; R. Green, Preston, 535.

Section 4.—Sussex.—F. Rossall Sandford, Shrewsbury, 516 eggs; W. Bradbury, Bury, Lancs., 526; J. Taylor Lester, Newport, Salop, 516.

Section 5.—Black Leghorns.—W. A. Lansley, Whitchurch, Salop, 491; Wilson Beattie, Rothersthorpe, Northants, 463; Lady Anderson, Sharnbrook, Beds, 463.

Section 6.—Any Other Light Breed.—The Co-operative W. Soc., Whalley, Lancs. (An.), 481 eggs; Storer Bros., Didsbury, Manchester (An.), 463; H. Lynden Lemond, Devizes (La Bresse), 448.

Section 7.—Any Other Heavy Breed.—Miss P. Mills, Bishop's Castle, Shropshire (Rks), 580 eggs; F. R. Welch, Bewdley, Worcs. (Rks), 549; O. C. Brown, Scunthorpe, Lincs. (Rks.), 536.

SINGLE BIRD TRIALS.

Section 1.—White Leghorns.—W. Hamnett, Blackpool, 112 eggs; W. M. Golden, Leire, Rugby, 107; E. Leslie Pattison, Longton, Staffs, 106.

Section 2.—White Wyandottes.—S. Street-Porter, Ely, Cambs., 113 eggs; Mrs. Alec Wilson, Garth, Breconshire, 109; E. Watson, Colne, Lancs, 105.

Section 3.—Any Other Light Breed.—S. Street-Porter, Ely, Cambs. (B.L.), 92 eggs; A. White, Malpas, Cheshire (B.L.), 88; W. Hamnett, Blackpool (An.), 96.

Section 4.—Any Other Heavy Breed.—W. M. Golden, Leire, Rugby (L.S.), 100 eggs; E. Leslie Pattison, Longton, Staffs (R.I.R.), 100; O. C. Brown, Scunthorpe, Lincs. (Buff Rk.) 101.

The Internal Mechanism

of the Egg-Laying Machine.

By **J. L. ROSEDALE.**

(Continued).

Probably many improvements can be made in the rations, which are not in the least put forward s necessarily being ideal, but improvements in pract have to follow the development of scientific facts. I this order of study is not adhered to, practical exp ments become a series of trial and error, and once alteration in market price takes place, we are l unless we have scientific facts (not theories) beh us to assist in making wise changes in accordance wh current price lists.

There is no reason why any of these mashes sho not be given with any of the grain mixtures, for th will in every case give a sufficient amount of prote energy and salts, and probably of vitamins too. Gr food may be supplied if possible to make sure of fat soluble vitamin balance. When green food is sh or of a poor quality possibly part of the fibrous b may be substituted for the more fibrous alfalfa me Alfalfa meal is supposed to contain the fat solu vitamin, but from the analysis (2.2 per cent. fat) would not expect to find very much. As the fat solu vitamin is destroyed easily, there can be no doubt t alfalfa meal, as we know it, must be inferior to fresh material. Under entirely intensive conditions situation is perhaps a little more serious. In s cases 1—2 per cent. of cold liver oil in the mash put the matter right.

The mineral content of these rations is of go quality and quantity, provided the fish meal has analysis similar to that given above. If we were use a meal with the analysis of our meat meal, it is possible that under certain circumstances we mi get short in this respect. That is why I never acc an animal meal whose ash analysis is not supplied.

Recently readers of this journal had brought bef their notice some experiments on this subject com from Aberdeen. In all cases except one, where bl meal was used, no animal meal was given. The res however, were similar to those obtained by the Uni States Department of Agriculture a few years a using several kinds of bean meals. The results sh that a bird, like any other animal, requires a cert amount of mineral matter in the diet, but that th is no reason to suppose that the bird's requireme are either very great or specialised. The experimen Plimmer and Rosedale (Biochem, Jour., 1922) wo indicate that, as far as poultry are concerned, at lea blood meal is (may I say) not exactly "Fool-proof

With heavily-laying pullets on ration A. (ash cont 3.3 per cent.) I should, if they were kept intensive, prefer a meal of the analysis of the meat and b meal, because pullets have often a triple job; ma tenance, egg-laying, and more growth. The prot would be slightly reduced, but not much, while mineral content would be increased.

e or two points concerning these rations still re consideration. It will be noticed that in these the animal meal constitutes ten per cent. of the ration, and not merely ten per cent. of the mash. dly, those constituents, such as ash and fibre, do not give energy to the body, are kept low. e reason is that we must have high production. ially in winter time, when hours for feeding and al supplies of food are short. We have learned eggs contain protein and ash, *as well* as water ir composition. We have learned that protein is st *one* of the factors concerning production. It also be observed that an adult bird weighing 4lbs., and eating daily four ounces of such s as those above, receives about one hundredth of its body weight as protein, while some of rotein consists of vegetable protein.

has already been pointed out, by such a figure er cent. of animal meal) we can ensure the same as regards the mineral supply as we can regard- e "quality" of protein.

reasons for the second point have to do with food or energy requirement. McCollum showed years ago that the essential point with regard to ls was quality, not quantity. Excess of lime o good—it caused rickets. It had, indeed, to be ced with phosphate, and its percentage in the thereby reduced. The converse holds equally and excess phosphate has to be reduced by lising it with some base, such as lime or iron, s been shown by experiments in this country as s by McCollum.

re, as we have seen, is not food, and we can easily fail to supply enough energy-giving food fill up the crops with fibre.

is extremely easy to become a "Faddist" in ion. You can raise a tremendous thrill over a in or a lump of lime sufficient to obscure from view the real facts of the case; but the fact ns that you will never get winter eggs in sufficient quantity to make "Grading" worth while, if nly supply your birds with a four ounce lump of hate of lime, smeared on one side with yeast t, and with cod liver oil on the other! Energy eat and protein, too, are all essential to the ism, and the most important thing to get right is ROPER BALANCE of EVERYTHING.

live in an age where there is so much to impress inds that the diet cannot be completed by con- ng it from the energy aspect only, so that there at necessity for much experimental work to be cted with open mind as regards the translation entific knowledge into terms of ordinary food-

last word—I am sure you will agree that LANCED" rations are desirable, but how is a poultry-keeper going to find time to do all the ating? Mr. Busy Poultry Keeper, don't calcu- When you want to employ a new food just look e analysis of the new food, and compare it with e you want to change. If the difference is not r—and it scarcely ever will be—than the diffe- in the above examples, there is no need of calculation whatever. The greatest upset that you may possibly want to make is to put oats in your grain ration. Oats are very fibrous. Dispense with something in the nature of bran, and use maize meal or fine middlings, according to your ration. You need not calculate anything as a rule, though surely it is a point of "Good Husbandrie" to be able to calculate sufficiently to make the utmost of opportunities as they come before you.

Generally, however, you will not need to calculate if you have the price list before you, and will turn to page 103 of your "Register," and perhaps as you turn over the pages to find it, you will come across something else that will be profitable, too!

(Continued at Foot of Next Column.)

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

BACCILLARY WHITE DIARRHOEA.

A CURE?

I have been asked if I can get an impartial trial for what is stated to be a CURE for B.W.D. My correspondent says that if it does what it professes, it will be a very happy thing for the Poultry Industry. That is very true, but in my time I have heard of many cures and preventives, and I have never yet found anyone of them which could be substantiated. So what is wanted is a TEST, and I am hardly in a position to carry out what would be regarded as a fair and decisive one. However, it may be worth a preliminary canter, and if the results are encouraging, we may be able to make a further attempt. The first essential is that it should be tested on a brood of chicks which have been certified by a competent authority to be suffering from B.W.D. We must have no mistake here. It is stated to be a "one-day cure," and to be inexpensive. I have enough for 50 chicks; it is in powdered form, and should be mixed with the food. If any of you are prepared to test it, and will send me some particulars to enable me to choose the most suitable case, I will send it along. All correspondence will be treated as confidential. I would suggest that the best method would be to take a brood of 50 chicks, which are known to be suffering from the disease, split them into two lots of 25, and give one lot the "cure," and watch the result. If it fails no harm will be done; if it succeeds, perhaps it will be of great value to us, but I would rather it had been sent to me as a *preventive* than a cure.

LEG-WEAKNESS AGAIN.

In a recent issue of "Eggs," Mrs. Ellis wrote suggesting that until careful microscopic and bacteriological examination is made, leg-weakness must remain a mystery, and an annual menace. I was not able to agree with all she said. We must not look for a specific cause of the trouble, when undoubtedly there are many contributory causes.

Dr. Bell Tawse has very kindly sent me a pathological report of six chickens of his which died of leg-weakness. He tells me that Dr. G. M. Debrashian, who made the report, is a pathologist and bacteriologist of vast experience, and is agreeable to the report being published if I think it will interest my readers. I am perfectly sure it will do so, and that you will be grateful to both Dr. Debrashian and Dr. Tawse.

REPORT.

"Three chickens received February 20th. Three chickens received February 23rd. Aged about three weeks.

Post-mortem examination revealed well-developed chicks. Internally to the naked eye no gross abnormality was found. The crops were empty, and the bowel contained very little debris, but showed no sign of inflammation. The lungs with ribs attached floated in water. The right side of the heart was engorged. Brain and meninges normal.

Cultures were made from the upper bowel, and from the lower end near the vent. In all cases the results were negative; no pathogenic organisms could be detected on any of the media employed.

Microscopical section of lungs, genital glands and kidneys showed nothing abnormal. The lungs showed no evidence of pneumonia.

The chicks had evidently not eaten any food for several hours (? days) before death. The immediate cause of death was heart failure, but the examination failed to reveal any causes which led up to this."

If I may say so, I think that in any investigation of leg-weakness, there should be, as far as possible, co-operation between the scientist and the practical man. We are in a position to give the scientist a good deal of information which may help him in his investigation, and thus save much waste of valuable time. For example, why is the trouble so often checked by moistening the litter, or by putting down a few turves, or by allowing the chicks to run out on the earth? Why in some cases is cod liver oil effective, and in others yeast extract, and why do we get more trouble early in the season than late, and in dull cold weather than in a fine sunny spring?

DOWN DEVON WAY.

On the 26th I visited the Ottery St. Mary Branch of the S.P.B.A. Travelling to Salisbury the previous day, Major Eden very kindly took me to the Wilts County Laying Trials, where I spent a very interesting hour. The new system of scoring approved by the Poultry Advisory Committee, appears to be giving great satisfaction, and I was a little astonished at the number of "special" eggs recorded. At this period 2.1/8ozs. constitute a "special." In the first four weeks it was 2ozs., second four 2.1/16ozs. First-grade are recorded as 1.7/8ozs. and over, but under 2ozs. during the first four weeks, 1.15/16ozs. but under 2.1/16ozs. during the second four, and 2ozs. and over, but under 2.1/8ozs. for the third and succeeding four weeks. This is a somewhat severe test, but having in view the fact that the primary object is to indicate the value of the selected birds as potential breeding stock for egg production, and the success that had attended it so far, I am sure it cannot be regarded as too severe. The birds all looked ren ably well, and the situation is excellent. It will haps occasion some little surprise when I say th pen of Light Sussex had laid most specials. can expect to see some improvement in the where this system of scoring is adopted, for it eventually tend to weed out undersized stock, lead to a permanent improvement in the size of

On the Thursday morning I had a look round M Eden's birds. I saw a fine lot of early chicks, cipally Light Sussex, but quite a number of W. horns. One Sussex pullet I handled had laid 172 since the end of September, all well over the ounces, and Mrs. Eden told me were hatching ex tionally well. We then left for Ottery, pa through that part of Dorsetshire which has cert some claim to be called beautiful. About mid-da came to Messrs. S. and J. Parsons' farm at Mus We had a warm welcome, and a most interesting on the farm. There was a splendid lot of chicks, Mr. Parsons tells me he has had an exceptionally hatching and rearing season; over 700 of the c were individually bred. The conditions under w they were reared were very favourable, but there no coddling. They are turned out on the third d to Mother Earth. Mr. Parsons is a believer in t small flock system. Later we went round the be ing and laying stock. There was a grand White horn cock in his sixth year, and looking like a yo ster except for that look about the eyes which de lost youth. He had bred some wonderful stock, was a beautiful specimen of the breed. We several fine breeding pens of White Wyandottes Leghorns, and then were taken to the pullets some big records were put up, but the need for breeder to individualise was impressed upon us. Parsons mentioned a pullet which had laid 17 since the end of September, but most of her failed to hatch; another pullet we were shown from stock with wonderful records on both sides. would have puzzled the handler—a neat head den the layer, fine texture, good depth, and everythi indicate that her record was something to boast ab Only the tell-tale pigment, and the full shanks in ted some doubt. Her actual record was 28 eggs i months.

From Musbury we journeyed on to Ot where the meeting was to be held at six o'cloc the Cinema Theatre. Mr. Loram, the President o branch, was in the chair, and was supported by John Kennaway, Major Eden, Mr. Ross, the Co Agricultural Organiser, Capt. Jelley, the Br Secretary, and Mr. Russell, the County Instru Branch business occupied the first half-hour. Loram, owing to calls upon his time, was unab continue in office as President. His resignation accepted with much regret, and Sir John Kenn was unanimously elected in his place. Sir John responding, said that he hoped he would be of to them. He appreciated the honour they had him, but he felt sure that Mr. Loram's resignation a matter of great regret to all of them. Capt. J who read the annual report, was unanimously re-e ted Secretary. He said that their great difficulty that members were so far apart. They were

·range for co-operative buying of foodstuffs, etc., the seling of eggs They had revived the poutlry on at the Agricultural Show at Prestbury, and secured a bigger entry than ever before. The nittee was re-elected en bloc. Mr. Lunn was ed Treasurer in place of Mr. Wood, who resigned. Chairman appealed for more support to the ek He said poultry-keeping was making great es in Devon, but they wanted more educational and more organisation. Following this I spoke the work of the S.P.B.A. and the N.P.C., then read a paper: "Some Causes of Failure," answered questions. Then Major Eden gave an esting talk on the work of the Ministry of Agri- re, referring particularly to the County Laying s, and the method of scoring. After that films of Bostock Smith's farm at "Heaseland's," and two dian films, "How Not To Do It" and "How To t," were exhibited. These latter two referred to narketing of eggs. The films were very much eciated, and were really excellent. Mr. Ross then on the value of poultry to the general farmer. gave a most excellent and interesting address, ing out the splendid position of the farmer for ry-keeping, of their value to old pastures, in ng up the coarse grass, and allowing light and air t to the roots, of the manurial value, of their in destroying insect pests, such as wire worm, All this was of immense value, apart from the of egg production. It is curious that the farmer never realised all this, and how difficult it is to him do so. Generally he professes to treat poul- ith contempt, but the change is coming. Time ot permit Mr. Russell to say more than a few , and the usual votes of thanks brought the ng to a close. Capt. Jelley was heartily con- ated on the excellent arrangements made for the ng, which was a great success.

THEFT OF FOWLS.

H. Carveth tells me that he has had the mis- e to have a valuable pen of Australorps stolen. were mated especially for competition work.

re is some little consolation, however, to know he thieves—Benjamin Little, 40, his son, aged d Alfred G. Martin—were arrested and charged he theft All three prisoners pleaded guilty. min Little was sent for two months' hard labour, Martin for one month, and the boy bound over elve months.

r all that is no great consolation to Mr. Carveth, as lost what he cannot very well replace.

Banham, Attleborough, Norfolk.
14th February, 1925.

Sir,—Seeing week by week in "Eggs" the appreciation by the testimonials of the readers of your excellent paper, t to mention the S.P.B.A., I think it about time I added me. Since becoming a member of the S.P.B.A., and g the columns of "Eggs," I feel I have learned a lot of ence of poultry keeping, and cannot praise your society er too much.

king you again.

Yours sincerely,
GERALD L. CASTLEDEN.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

Economy (Stafford) asks as to the value of Palm Nut Kernel Meal as a poultry food. The analysis, he thinks, is very good, and he cannot understand why it is not more universally used as it is a cheap food. This question is asked very frequently. Palm Nut Kernel Meal was largely used during the war. The analysis, as "Economy" says, is fairly good, and, based on this, it was stated that the meal had a feeding value equal to that of fine sharps, thus illustrating how deceptive an analysis may be. The meal was found to be unpalatable; it did not store well, and the chemically extracted more often than not scoured the birds badly. The crushed gave fair results, but in every case it was found wise to introduce it very gradually. As the birds did not like it, the consumption of mash fell off, and there was the consequent decline in the egg yield. It is not a food I can recommend, although it has been used successfully. In answer to his second question, Mr. J. Thomas, of Garstang, owned a Buff Orpington pullet which laid 343 eggs in one of the American tests; it was not an Australorp as he suggests.

N. D. (E. Hants) writes that he crossed his White Wyandottes with White Leghorns, and has been very disappointed with the result, as the cross was not nearly so productive as the pures. Now he wants to know what he can mate the cross-breds to next season, whether I think the poor production was due to crossing, and whether, if he mates his Wyandotte hens to a male of the same breed next year, they will breed true. It is difficult to understand why "N.D." should have made the cross, as his Wyandottes were giving such good results; but that is no business of mine. In answer to his question, the poor production in this case was due to the crossing. I do not mean to imply that crossing necessarily means decreased production, but the probability is that "N.D." mated a male bred from a poor producer. He will be wise if he does not breed from the crossbreds at all; but if he wishes to do so, a White Leghorn male bred from a hen with a good winter and full year's record would be the best mating. In answer to his other question, he will be perfectly safe in mating his Wyandottes to a male of the same breed, the progeny will be pure Wyandottes.

D. F. (Huntingdon) sends me a number of unhatched eggs, and asks for an explanation as to the cause of failure; only 32 per cent. hatch from his 70-egg incubator and all eggs selected. The selection, I think, was in a great measure responsible for the hatching failure, as all eggs were abnormally large and one had two yolks. Large eggs generally hatch badly owing to the amount of fluid they contain, there was no indication that anything was wrong with the incubator, "N.D." It was the eggs which were at fault, and there was some indication that your feeding is a great deal too stimulating.

G. Long (Aston) writes that his customers complain that the white of the eggs with which he supplies them is watery, and they will not boil. He has been accused of selling pickled eggs, and is naturally very indignant. The most probable explanation is that he has been feeding an excessive amount of animal food, and he would be wise to reduce it. I expect that only a comparatively few eggs are as he describes. The sample of Sussex ground oats he sends is of good average quality; the sharps are little better than ground over bran.

Anxious (Harwich) has three pullets which I suspect to be suffering from "layers' cramp." He says they have lost the use of their legs, and can only stand on their hocks; the comb is very red and their eye bright, so he does not think there is anything serious the matter with them. It may become very serious if it is not treated at once. It is a purely nervous trouble from which, as a rule, the most prolific pullets suffer. Mash feeding should be discontinued, the pullets placed in a hamper on a bed of soft hay, and given a mild dose of Epsom salts and plenty of fresh green food; the most suitable food to give them would be boiled rice. "Anxious" should see that his feeding is not too stimulating, or he may have other sufferers at this season of the year.

M. V. (Shipley) has some Campine chicks which are not thriving; they are three weeks old, the mortality is low, but the chicks are "peevish"
and do not eat well. If "M.V." had sent
few more particulars I might have been ab
assist her. There are so many reasons why
do not thrive, and I can only suggest a few
leave her to try and discover which is the
likely. There is overcrowding, insect life,
heating and over-eating, too; chill, unsu
food, badly ventilated brooders, too close co
ment, lack of green food, mash fed in too m
condition, breeding stock at fault, and bad
ing. I must leave it to her to discover wh
the trouble. In the meantime she might try
them cod liver oil.

H. B. (Hants) writes and thanks me for
vious reply of a few days ago, and states
the trouble now appears to be subsiding.
was in reference to what I thought to be ar
break of coccidiosis. He now states that he
"Hearson" 60-egg size hot-air incubator
room temperature is between 45 and 50 deg
and he started the eggs at 104, not turnin
cooling for the first 48 hours. He now pro
to turn them three times a day, changin
corner ones about each time, and as this take
or six minutes will it be necessary to cool
each day as well? Also, should he let the
perature keep at one degree higher in the
drawer after the first ten days, or should he r
it to one degree lower. In answer to his
As he is turning three times a day, and it
five or six minutes, it will not be necessa
cool at all. I never advise cooling under an
cumstances. The animal heat generated b
eggs after the tenth day will cause the temper
to rise, and if he keeps it at 105 after the
day no harm will arise.

R. A. M. (Trentham) writes and asks wh
we would tell him through these columns if
liable to be rated on land at the agricultural
and his poultry houses, meal house, etc.,
assessed separately at the ordinary house
The law is, and this applies to farmers gene
that where a man is assessed at the agricu
rate—that is, one quarter—all buildings, p
houses, etc., except those which are small por
ones, and which are frequently moved about
fields, have to be paid for at the ordinary
The concession applies only to land.

"Henwife" (Fife) wants to know where
can get full particulars regarding the Na
Poultry Diploma examinations. If she will
to the Secretary of the National Poultry Co
Mr. Edward Brown, F.L.S., 20/21, Essex S
London, W.C., he will forward her the fullest
ticulars. We are glad to have her appreci
of "Eggs."

H. E. (Bootle) asks the following question
He has incubated a dozen L. Sussex eggs

end for which the latter paid a guinea to someone se. The result of the first test was one infertile, o addled and one broken yolk. My correspondent id at the time "if he gets three chicks out of is lot he will be lucky." He left them in the cubator as long as he could, and there was four od chicks, one egg had an air space half the e of the shell, in another the chick completely ed the shell, and the other two were addled. the same machine he placed 15 Light Sussex m an entirely different source for another friend. e result was thirteen good strong chicks. He ks if the vendor ought to allow anything as the gs were such a failure? No arrangements had en made to that end, but he seems to think that knew the eggs were wrong because his friend st wrote to say he was sending them for in- ection, and at once the vendor replied on the fensive—said how well his had hatched and he uld send them elsewhere for inspection. (2) has bought one gallon of cod liver oil for the icks. This is thick yellow stuff, and the vendor ys it is Commercial Oil. Should it be like that? smells something like linseed oil and cod liver mixed. His third question is, that an agent a certain appliance tells him that even if he lers through the S.P.B.A. the order will come ough him, the agent, as he objects to this an and won't buy one if this is so. In reply to r correspondent's queries. I think this is a case ich we must consider the custom of the trade. e vendor guaranteed nothing more than fertility, d as only one of the eggs was infertile that is he could be called upon to replace. It is, of urse, a bad misfortune for the buyer, but I think correspondent will see that even in such a case this it would render the breeders' position ost untenable if, as the result of a bad hatch, had to replace all the eggs which did not hatch. gree that in such a case as this the vendor uld meet the buyer, but that is purely a moral, if we like a business, question. Legally he is compelled to do so. (2) With regard to his ond question. If this cod liver oil is as des- ed I should not use it, as it would almost sure cause digestive trouble, and it certainly ought to smell something like linseed and cod liver mixed. In answer to his third question, the nt is telling an absolute lie. If my corres- dent, as a member of the S.P.B.A., sends an er to us it will not have to go through the agent. y should it?

POST-MORTEMS.

V. K. In reply to your query, the one and only se of coccidiosis is the microscopic parasite, Coccidium Avium, or by its new name, Eimeria um. No kind of food unless contaminated with organism could produce the disease. Sharp might cause an inflammation, and it often s, of the intestines, but not coccidiosis. d birds may, by their droppings, infect the ground. If a hen is a carrier she may infect her eggs, and yet show no signs of disease herself, and persons or animals may carry the disease on their feet from an infected piece of ground to an uninfected.

W. S. The post-mortem examination of the two hens showed them both to be the subjects of fowl typhoid, an infectious disease caused by the bacillus Sanguinarium. There is no known treatment for this disease, and the best that can be done is to prevent it spreading throughout the flock. Isolate the affected flock, and destroy any that show signs of illness. Disinfect the premises and equipment most thoroughly, collecting and burning all litter and droppings. As a preventive, dissolve fifteen grains of zinc sulpho-carbolate in every gallon of the drinking water, and arrange the food utensils so that contamination with the excreta is avoided.

A. G. T. Gapes is the cause of the trouble, the windpipe of this particular subject being packed with the Syngamus trachealis, and in a high state of inflammation. The chicks become infected by picking up the ova of the worms, in food, or water that has become contaminated, and also, of course, from the ground. I should suspect the hen run as being the infective centre. Treatment is either individual or "en masse," the object in either case being to cause the expulsion of the worms from the trachea and bronchi. The old method of trying to extract the worms by means of a feather or twisted horse hair is not satisfactory or devoid of risk to the bird. Direct injection, through the opening of the larynx, of a 5 per cent. solution of sodium salicylate, dose 15 drops, by means of a hypodermic syringe (minus needle) and a short length of india-rubber tubing (a small rubber catheter is suitable) is safe and effectual. The injection produces choking and coughing, which soon passes. Expelled worms should be burned. The "en masse" treatment consists of placing a number in a box, the floor of which is covered with slaked lime; finely powdered chalk and camphor is then projected into the box, so as to make a dust, the object being to make the birds inhale it. Two parts by weight of chalk, and one of camphor are the proportions. Salicylate of sodium should be dissolved in the drinking water, three drams to the quart, as this kills the embryo worms. The destruction of the worms and their embryos in the soil is a matter of great difficulty, unless the land can be ploughed and limed and birds kept off it for a year. But, failing that, a heavy watering with a chlorinated lime solution, ¼ lb. to the gallon of water, is the best that can be done. The disease is only infective through the channels stated, and is in no sense an air-borne one.

H. W. E. F. The post-mortem examination of the chicks showed them to be affected with rickets, with the digestive disturbances that accompany this disease. I should think that a great many of the casualties occurred from over-laying, as the skulls were so thin and deficient in bone that the slightest pressure would be liable to seriously affect the brain. I should advise the continuation of the iron tonic and the addition of cod liver oil to the mash, and plenty of green cabbage to pick at. The trouble is not infectious, but due to the inability to make use of the lime salts necessary for the normal production of bone from cartilage—in other words, there is a condition of perverted body chemistry, which needs for its correction vitamines (cod liver oil and cabbage), exercise, and unfiltered daylight.

W. C. The post-mortem examination of the W. W. pullet, which, by the way, was much too fat for a layer, showed the cause to be apoplexy of the lungs, due to the straining in trying to pass a soft-shelled egg. I should advise handling the birds, to ascertain if there are any that are in the same condition of obesity, and giving any such a moderate dose of salts, fifteen grains, either in the mash or drinking water, and making a substantial reduction in the fat-forming portion of the ration. For a time at least, leave out the maize and fish meal, and give a full supply of oyster shell grit. You need not apologise for giving me helpful details as to management, etc., they are very welcome, and a great help in enabling one to give sound advice.

SIXTH MIDLAND LAYING TEST.

Leading Pens in each Section, 5th Month (140 days)—Feb. 23 to March 22, 1925:—

Professional Section (4 birds).—White Leghorns.—Arthur Snowden, Crosshills, Yorks, 326 pts.; C. J. Ashton, Hathern, Loughborough, 312; T. Baillie, Rothesay, 298.

White Wyandottes.—J. H. Dowden and Sons, Heathfield, Sussex, 339 pts.; Misses Argles, Alton, Hants, 332; M. F. Phelan, Northam, Devon, 331.

Rhode Island Red.—K. A. Crawford, Dilham, Norwich, 293 pts.; Mrs. Athol-Stuart, Boxmoor, Herts, 291; Alderson Smith, Farms, Ltd., Braunston, 277.

Light Sussex.—C. L. & J. A. Thomson, Hollywell, 279 pts.; F. R. Welch, 261; Col. A. Dugdale, Moreton-in-Marsh, 271.

E. Thomas, Sartrouville (W. la B.), 272 pts.; Blakesley & Blythe (B.L.), West Moors, 216; R. A. Fawssett, New Radnor (B.L), 207.

A.O.V. Heavy Breed.—H. W. Gee, Lickeys (Barn.) 237 pts.; F. R. Welch, Bewdley (Buff Rks.), 177; Mrs. L. C. Lees, Rugeley (Buff Rks.), 176.

Single Bird Section.—J. Small, Edgbaston (B.L.), 92 pts.; F. Nicholls, Alvechurch (W.W.), 90; F. A. Rann, Shackerstone (B.L.), 85.

MIRFIELD AND DISTRICT POULTRY-KEEPERS' ASSOCIATION LAYING TEST.

Report for Fifth Month.

The Fifth Monthly Period closed on March 15th. The health of the flock is very good. There is a considerable increase in egg production over the previous month. One bird has not yet recorded an egg (No. 165).

SUMMARY OF LEADING PENS.

White Leghorns. Three Birds.—Ledgard and Brown, 159 pts.; W. Horsley, 151; N Firth, 147.

Any Other Variety (Light). Two Birds).—Davey and Sons, 100; H. Poole, 56; H. Poole, 55.

White Wyandotte. Three Birds.—R. Scott, 159; Ledgard and Brown, 149; E. G. V. Ermen, 148.

Any Other Variety (Heavy). Three Birds.—W. Horsley, 271; P. Furness, 192; T. E. Burnett, 171.

White Leghorns (Single Bird).—A. Blackburn, 69; W. Horsley, 66; Ledgard and Brown, 62.

Any Other Variety (Light).—Sykes Bros., 49; F. Elmour, 38; Ledgard and Brown, 22.

White Wyandotte.—C. Whiteley, 78; A. Blackburn, 75; H. Crowther, 74.

Any Other Variety (Heavy).—W. Saxton, 59; A. Sykes, 55; E. Saxton, 50.

Bees—Combs.

By E. W. D. MADOC.

No part of the equipment contributes so much
successful bee-keeping as a good supply of first-cl
combs. By their use the honey crop is larg
increased, partly because of the labour saved the b
in building combs, but mainly on account of th
great influence in the prevention of swarming. Dur
1924, a bad swarming season, I ran a small apiary
twelve colonies, which were over a hundred and fi
miles away, and for this reason I was only able
visit them three times during the season; but th
had an ample supply of good combs, and a good c
of honey was secured, only one stock swarming out
twelve. Another apiary of about forty stocks nea
home had no drawn combs, but plenty of room in
shape of frames containing full sheets of foundatio
Under these conditions every stock made an attem
at swarming during the season, and had I only visit
them as often as the other twelve mentioned I think
may safely say the honey crop would have been
and it was only by frequent visits and plenty of ha
work that a fair crop of honey was obtained.

Perfect combs are secured only by constant c
and attention to detail, from the making up of t
frame to the final drawing out of the comb by t
bees.

The frames should be of strong construction a
well nailed. The next operation is wiring. The w
used should be of rather stouter gauge than th
generally supplied, and should be well tinned to mi-
mise rusting, the number of wires depending on t
depth of the frame, spacing the wires roughly t
inches apart. Holes are bored in the end bars, a
the wire is threaded through these, the ends bei
fastened to tacks nailed into the end bars. Before t
wire is fastened round the last tack it should be draw
as taut as possible. A properly-wired frame will ha
the end bars slightly bowed inwards by the tightne
of the wires. Where a number of frames have to
wired, it is worth making a form board which will ho
the frame with the end bars bent inwards to a co
siderable extent. If the frame is then wired on
moderately tightly, the wires will become very ta
when the frame is released from the form board.

A full sheet of the best quality foundation shou
now be inserted into the frame, and the wir
embedded into the wax. This may best be done wi
the special electric tool for the purpose, if electrici
is available either from the house supply or a c
battery, otherwise a small soldering iron with a sma
groove in the end makes a good embedder when heate
The tool most generally sold for the purpose, known
the spur embedder, is made in many different pattern
and in most cases is highly inefficient. Wherever po
sible frames containing foundation should be draw
out above the brood nest to get as large a percenta
of frames as possible drawn out along the bottom, a
attached to the bottom bar. When the frame is place
in the brood nest to be drawn out, the bottom of th
frame is the coldest part, being nearest the entranc
and a gap is generally left between the bottom bar
the frame and the comb.

Correspondence.

raw our readers' attention to the following
er which we have received from a corres-
dent. As far as we are aware these views
e never before been published in this country.
Editor):—

VITAMINS.

To the Editor of "Eggs."

r Sir,—I happened to pick up a copy of
gs" and saw there an Editorial by you on
itamins, which interested me greatly, as I
been studying the subject. I have not the
to enter into a long controversy or answer
s, so do not wish my name published,
ially as I cannot yet absolutely prove all my
usions. Subject to remaining anonymous,
ot being bothered to answer a lot of ques-
if you think it will interest your readers you
publish the following. As far as I have yet
he following are my conclusions :—
vitamin (or vitamins) is an element of the
und sun's rays. It is probably spherical and
ous, but too minute to detect under bacterio-
l instruments (unless possibly when collected
monia in a mass). One speaks of tubercle
s as having a "housing." When speaking
vitamin I prefer the word atmosphere to
sing," using it in the same sort of sense as
eaks of planets having atmospheres (which
pheres can have varying chemical com-
ns, as one can prove by variations in their
a). I use that analogy advisedly. It is
ely unlikely that the vitamin is soluble. Its
pheres in certain circumstances probably are
—the sphere itself almost certainly (in-
ctible. I know nothing whatever of the
Institute experiments, but think this : Dr.
is right in his conclusions. So probably
s **are** especially rich in vitamins, though I
not have expected it, but on second thoughts
ve they **are** rich in quinine. I think there
e probably only one vitamin. It can prac-
certainly change its atmosphere—i.e., be
mosphered" and reassume anyhow the
tmosphere, but probably also under certain
ons other atmospheres of totally different
al composition, and when so housed giving
different results.

e, what is probably the myth of vitamin
C being soluble. The leaves of many
can store this element—(or elements if
eally is more than one). Grass that has
sunshine is extra vivid green—when it
e summer sun you get, almost visibly, a
shade of green. Turnips, swedes and
s collect it with their leaves, and have the
faculty of storing it in their roots. Rape—not much grown I think in this sunless climate—is not recognised as ready to put lambs on, or of much feeding value, till the leaves turn a definitely blueish green in countries where largely grown.

As regards animal life, the vitamin is simply nothing more nor less than that which charges the nerve cell batteries of the animal body. I do not know how much is generally recognised, but I take it that it is anyhow. I think the way it does it is this. It has a very powerful effect on the bacteria concerned in fermentation ; probably it affects animals through bacteria in the process of digestion. Regarding its action on bacteria. When a hay stack ferments immense quantities are given off in nitrogen (in the same atmosphere as the plant collects them), being, when in that form, heavier than all, they fall to the ground with a fountain-like action, or anyhow give definitely increased fertility within a small radius of the stack. Now, as long as they are in an atmosphere of nitrogen you cannot do anything with them, and nitrogen is very inert and very difficult to get to form a chemical compound with air. Under high pressure, however, you can get ammonia. This happens in silage made of vetches (i.e., you get a strata of ammonia-soaked "refuse" near the top) —for as "refuse" it is usually regarded, but I will say no more on that point except I think anyone that tests with that on the bacteria of fermentation, using thermometers, will be satisfied with the result, but if he uses it to test other foodstuffs for vitamin content, he will either be dissatisfied with the result or burn every table ever compiled as utter rot.

Next, as regards the effect on animal life. Some wild animals have eyes that are luminous in darkness with this stored elementary elements of light, and others, though not having eyes which definitely shine in the dark, yet probably see in the dark by this means. As regards those with eyes luminous in darkness—well, heat, sound and light (and not wireless only) are due to vibrations—i.e., those animals can transmit the vibrations of light beyond their bodies. Instead of fooling with rats and oranges, why on earth do not the Lister Institute try how long an animal can store light in its body, and not get absolutely left by the Germans? I am inclined to think that these spheres, acting on certain bacteria, can give off a definite ray with a totally different vibration to any we know, and that the Hindoos have just possibly known this for centuries among the highest initiates of their priestcraft, and prepared the essentials very likely, too, at Lhassa ; by means of which they are able to do various tricks, such as the growing tree and other things that are otherwise inexplicable—hence their contempt of Western knowledge, but that is by the way.

My point is, that certain animals can transmit vibrations by means of stored light or vitamin beyond their bodies. We know they can transmit the vibrations of sound—I think also light. Let us carry this further. It is known and recognised in the medical profession, though not commonly known, that it is possible to perform certain abdominal operations quite painlessly by disconnecting a nerve (near the spine, if I remember right), i.e., the nerve system is analogous to a telephone system. What generates the current? The existence of the **system** as recognised **within** the body. Why not recognise the possibility of transmissions beyond? We have, all of us, known young people —specially girls—who seemed to radiate life and sunshine and attraction, and sparkle to all around them. To be prosaic, it often is the case that they are developing, or later develop, tubercle. Those **lovely** (?) eyes, **the pupils of which fail to contract** properly are a symptom of, it may be, tubercle. Or is it a symptom that their vitality or nerve system is out of order, and that they are squandering it quite subconsciously? Tubercle is always present, but only harmful when it assumes its housing, which shows red to the blue strain of the bacteriologist. What causes it to assume its housing? The presence or absence of other organisms as yet unascertained, and the vitamin is almost certainly closely connected. The same of cancer, but opposite. I mean that many diseases are probably not due to the organism that shows to the bacteriologist, but to the presence or absence of a group of organisms of which that is either a predominating number or the result. I think, at the moment, of influenza—also, by the way, diphtheria—where you get frequent positive results from throat swab specimens of nurses, yet the nurse does not get diphtheria. Why? The presence or absence of other organisms with the vitamin or vitality closely connected. Again, if this ray does not only exist, but also is capable of transmission some distance, how do very rare birds and animals find their mate in spring? Instinct? What is mating instinct but the subconscious use of this ray? How are castings or first milk compounded? What makes the inert nitrogen of the air sometimes unite with the oxygen to form oxide of nitrogen? A chemist **can** do that with difficulty and by means of electric discharges.

What gives life to spermatozoas? How else did life first start on this planet?

I suggest that the answer to all those questions is the vitamin—i.e., the retransmission of an elementary of the compound sun's rays. I think that a very misleading factor is one to which you very rightly draw attention—viz., the feeding of wrongly compounded rations, and much which has been attributed to lack of vitamins has been really due to feeding a ration which necessitated an animal eating beyond his healthy capacity of solid matter in order to get enough of one of the elements of nutrition. If it is true that extracts of fermented matter contain vitamins, then it almost seems as if there must be more than one vitamin. You get very powerful results from some fermenting matter, also increased fertility, I think due to the spheres in nitrogen, but your remark makes me wonder.

I note you say, "How is vitamin A stored i
liver of a cod?" The question is, **is** it s
there? Not one word do I take for grante
this subject. However, animals can store vita
and light can penetrate water—a portion of
to some depth—and fish feed on things i
water, and it is possible.

So far as concerns cooking, wherever nit
can go I think vitamins can, but does cooking
liberate all the vitamins? Surely cooked
such as apples, contain them? I am not clea
and for the life of me I do not know how long
since I last ate anything uncooked! More
fermentation causes considerable heat, yet
mented matter is said to contain them.

I have said, in effect, that I think it ma
possible to get a ray from fermenting veg
matter, giving a "totally different vibration t
we know at present." The word vibration is
loosely used, and needs a word of explan
The ether wave of wireless has, I think,
likened to the ripple caused in water by throw
stone in a pond, but is it the water that ripp
is it the air above it, or is it the point of cont
bolts? Carrying the analogy further, is it o
that ripples with the ether wave, or is it the
or is it the point high above where the e
atmosphere merges into the higher atmos
I suggest the vibration **travels** near the po
contact. As an illustration of a totally dif
"vibration" (or, perhaps, "action" is a
word), take the action of an "eddy" travel
little distance in a river, or a whirlwind tra
on earth, and bear in mind that animals give
stored light—a rotary vibration. I also not
you mention that young stock and chicke
badly last year, and express a doubt as to w
that may not have been due to lack of suns
that is not accurate on my part, and I have n
article before me, but I think you say som
to that effect. Now that, if true of chick
particularly interesting. Years ago I mad
still have) two incubators—these were ma
for commercial purposes but for experiment
only, so as to have everything under contr
observation. The air "circulates," i.e.,
used over and over again. By eliminatin
CO_2, the one machine, as a matter of fact,
used for eggs has many times hatched
cent., but that is only **partly** material.
material point is, that that machine cont
reasonable large volume of air per egg. T
experimental purposes is a nuisance, e.g.,
wish to test whether liver fluke taken from
absorbs oxygens and gives off CO_2, and w
the explanation of the chalk or lime one som
finds in a sheep's liver is that when embed
the liver it is the only way the fluke can
of CO_2. In cases of that sort the small
volume of air per tube you are bothered w
better. Accordingly, I made a second m
So far as concerns eggs it was useless as a h
True that machine does not absolutely eli
CO_2, but I think sufficiently so—i.e., as m

e case in nature. Fortunately, here I am
ng to hen experts who will know if what I say
ue of other machines—not simply contradict
ck to pieces.

e best thing to test with is white-shelled
s' eggs. Hen experts as distinguished from
ish institutions will know that if there is too
CO_2 the blood changes to a darker colour, l
ordinarily, and also will know the proper
t red.

efer to the appearance under **very powerful**
ng instruments. Well, this small volume of
nachine takes the eggs past the stage when
clearly see pulsating up and down the black
k, but the blood goes very pale indeed. Later,
veins go much too dark and then the germ
Now I attribute that very pale blood to con-
us exposure to air which has gradually be-
entirely devitalised.

th a view to testing this thoroughly I have
tly purchased an all-metal machine so as to
ely eliminate the variable factor on my
ines, of absorption of moisture by wood. To
my purpose it will have to be ultimately altered
A to Z, fitted with a circulating heater, a
eliminator, means of circulating air charged
CO_2, also when needed air plus O—CO_2, also
lus moisture and air minus moisture, and it
s more than a year's work to do it; but your
rk about young stock and lack of sun looks as
nay be right in what I think, and I am going
lily on. If, instead of controversy, any of
readers would help me by saying, if with other
ines, they have ever observed a tendency of
veins to go this excessively pale pink I hope
will tell you. You are only likely to get that
arance with entirely hot-air machines, where
ir cools too slowly and descends too slowly
very hot weather, and even then you very
won't get it as you are not using the **same**
ver and over again, but I think you will find
with certain machines, even though the CO_2
solutely efficiently eliminated. I only say
to any that have pretty powerful testers, and
used them on ducks' eggs. It is only fair to
that I am not asking this with a view to help
tching eggs, but as an assistance and a guide
perimenting on the vitamins. Also, any re-
will go primarily abroad, where they are more
ugh, and want it.

far as the hatching is concerned, if I have
ad luck to hatch more than a very few
ens, I won't know what on earth to do with
, as I certainly don't want the bother of rear-
lot, won't like killing them, and don't want
bothered with day-old chick business.

Yours truly,
"SEARCHER."

The Willows, Haydock.

Sir,—I take "Eggs" weekly from my local newsagent,
t of the six papers I take it is the only one I can take and
om beginning to end.

Yours sincerely,
(Signed) A. PIMBLETT.

THE EGG-PRESERVING SCHEME.

To the Editor of "Eggs."

Sir,—I regret to have to inform you that, at the meeting held at Anderton's Hotel in connection with the above scheme, it was decided to postpone the formation of a Co-operative Egg-Preserving Society until next season, as the Ministry had then decided that they could not approve the formation of the society under the Agricultural Credits Act, 1923.

At the meeting, Major Warman, who represented the Ministry, read a copy of the following letter in reply to a request for a statement as to whether the Ministry would approve the formation of the proposed society:—

> "Sir,—I am directed to refer to your letter of the 20th instant, on the subject of a scheme for forming a combined Egg-Preserving and Agricultural Credit Society, and to say, for the information of your Committee, that the Ministry would not be able to approve the formation of such a society under the Agricultural Credits Act, 1923. The Ministry recognises that co-operative societies do in certain circumstances require credit to enable them to make advances to their members in respect of goods delivered to the society, but not yet sold. The provision of credit on these lines through the medium of the Agricultural Credits Act has not hitherto been contemplated, and would involve a departure in several respects from the Model Rules approved by the Minister.
>
> I am, Sir,
> Your obedient servant,
> R. J. THOMPSON.

Major Warman said that he regretted it if anything he had said might have led to too optimistic a view of obtaining the Ministry's sanction to the formation of the proposed society under the Agricultural Credits Act. He added that the Ministry were now considering the possibility of providing facilities for marketing credits, and that there was every probability that such facilities would be available in time to provide the necessary financial backing for an egg-preserving society by next season.

The possibility of getting the necessary advances from the banks was also discussed, but as it was already late in the season to start preserving operations, it was decided to hold the scheme over until next year, in the meanwhile keeping in touch with the Ministry and with Co-operative Poultry Products, Limited, with a view to putting the scheme into practical operation in good time next year.

Some critics of the scheme have pointed out that we already have a number of societies dealing with members' eggs, and suggested that it would be a pity to form a new society unnecessarily. These critics are under a misapprehension, as it has been no part of the scheme to form a new society if it can be operated by one or more of the societies already in existence. Had the formation of the society under the Agricultural Credits Act been approved by the Ministry, it could not have been joined up with any existing organisation, unless that organisation first entirely revised their existing rules. All these difficulties arise out of the fact that the Agricultural Credits Act was not designed to provide the type of credits needed to make the scheme a success. With the provision of marketing credits now under consideration, most of these difficulties should be swept away, and I have strong hopes that the Egg-Preserving Scheme will be in operation at this time next year.

Yours truly,
F. C. ATKINS.

Our readers will note that our correspondent refers to our criticism of the scheme, in which we mentioned that we have already a large number of societies dealing with members' eggs, and suggesting that it would be a pity to form a new society unnecessarily.

We cannot understand how there can be any misapprehension, as at the original meeting the Chairman of the C.P.P., Ltd., suggested that instead of forming another society the meeting should consider joining up with that body which had already gathered valuable data in regard to egg preserving.

A unanimous resolution was then passed that the committee formed from the meeting should meet the committee of the C.P.P., Ltd., in order to formulate a concrete scheme.

The General Manager of C.P.P., Ltd., states, as appeared in our Correspondence columns last week, that he had heard nothing from Mr. Atkins, and that it would appear this unanimous resolution had been passed over and that it was intended to form another society.

We cannot follow Mr. Atkins at all. His explanation appears to be entirely unsatisfactory. There seems to be no possible reason given for the formation of another society.—(Editor.)

EGGS BY WEIGHT.

Dear Sir,—I am glad to see the question of selling eggs by weight has arisen again, and there seems a good deal to be said in its favour. The difference in the weight of eggs makes it very unfair to sell by numbers. I keep Wyandottes and Leghorns, and sell a lot of eggs at the farm. The Wyandotte eggs average just about 2ozs., the Leghorns about 2¼ozs. If a person comes for a dozen eggs, and I go to the Wyandotte house they get 1lb. 8oz. If another person comes, and I go to the Leghorn house they get just under 2lbs. If I had sold by weight, instead of numbers, it would have been much more fair, and I should have had another 4d. for the extra ounces; the same as the butcher or grocer charges me for whatever I buy from them.

An ex-soldier, who had lost his right arm in the war, told me last week he took his surplus eggs to a shopkeeper, who gave him 1s. 3d. per dozen. Passing the shop again later in the day he saw his smallest eggs marked up at 1s. 6d., and all the best ones 1s. 9d., or about 30 per cent. profit. If these had been sold by weight to the shopkeeper, obviously it would have been more difficult for him to have taken quite so much profit.

"SUSSEX."

EGGS BY WEIGHT.

Dear Sir,—I was very pleased to see the
written by one of our members, and also your re
on same with reference to eggs by weight. I
myself it is the most important thing in comm
with poultry-keeping at the present time, and
be much fairer, both to the producer and cons
than the system we now have.

I have been told that it would in time do awa
the large egg, as getting the same price for the
ones, breeders would give up aiming at size. M
opinion, however, is that it would encourage us
get larger eggs, and then we should not give so
for our money.

Yours truly,
L. F. CHIT

COST OF REARING.

Dear Sir,—It would be interesting to lear
your correspondent "Observer" arrives at 1
as the cost of a day-old chick—what items o
does he take into account? What does he ta
the average percentage throughout the seas
strong healthy chicks to eggs set, and wh
the average output of hatchable eggs per he
week? Then, most important and difficult
how does he arrive at the cost of the bre
pen, and so find the real cost of the hatching

I am not disputing that his figure of 1s. 3
the cost of a day-old chick is possible in a fa
able season on properly organised breeding f
where all hatchable eggs are incubated, or so
incubation throughout the season; but I wan
to help me by giving details to make it cle
poultry-keepers that the cost can be kept
to this low figure on such farms only, and th
commercial poultry farmer breeding for hi
cannot hope to approach it, because, among
things, his breeding costs are spread over a
smaller number of chicks.

I cannot, however, accept his production c
3s. 6d. for an eight weeks' old pullet, for t
his other figures as correct he has omitted l
in rearing, which in some breeds, and in som
sons, are considerable. Nor do I think the
chase of eight weeks' old chickens a practica
position except from near-by breeders, for c
of that age will not survive long journeys.

Yours truly,
M. W. SLA

COST OF REARING.

Dear Sir,—Should you consider the matter
ciently interesting, I should be grateful for a
space in which to reply to "Observer's" letter i
week's issue of "Eggs."

I will take the second half of his letter first.
says that it will pay the Commercial Egg Farm
buy his replacements, because, for his birds
profitable, he must hatch early, which involves a

hatching and rearing plant, with consequent heavy depreciation. But surely, if he buys replacements, he must, for the same reason, buy early-hatched birds. Then the supplier of these birds will have to have a rearing plant of similarly large capacity, and will have to meet the same depreciation figure. On "Observer's" own showing, this will either cut his profit out, or force him to raise his price.

I was not so much challenging "Observer's" figures as querying his statement that it would pay the Commercial Egg Farmer to buy his replacements. Given that the plant is of the same size, which, as I have pointed out, is necessary if the birds are being raised for the same purpose, the cost of rearing each pullet to six weeks old will not vary, whether the plant is situated on a commercial egg farm, or on premises given over to rearing and selling chicks.

If the Commercial Egg Farmer does buy his replacements, his gains are:—

1. Price obtained for eggs sold instead of set.
2. Saving of cost of rearing or buying cockerels.
3. Simplification of management and cheapening of feeding, due to running the whole flock as layers.

If we accept "Observer's" figures and my argument, then this gain, to justify purchasing replacements, must come to over 2s. 6d. per pullet renewal, or, in the case of a 1,000-bird plant, renewing 50 per cent. annually, to cover £62 10s. 0d.—surely rather an excessive figure.

Yours faithfully,
PHILIP T. N. WHITTON.

MARKETING.

To the Editor of "Eggs."

Sir,—Commenting upon Colonel Gilbert's letter and your remarks thereon, as well as on what has appeared in "Eggs" during the past few weeks, may I add a suggestion?

As regards the marketing of eggs and poultry; all that you write about co-operation and overhead charges is undoubtedly the case. Yet the average poultry-keeper would be content if the consumer's price was the selling price, less carriage. In common with thousands of poultrymen, I send up eggs in dozen lots to customers weekly and get a better price than in the local auction market. It is very little more trouble to rail a box to London than to place it in the market. The carriage on eggs is very reasonable, working out at about the same as the auctioneer's commission, and the consumer really pays it.

Thus I believe all we poultrymen want is a respectable Agent, who will introduce the Consumer to the Producer. The "Rules" would be simple. The "Producer" informs the "Agent" that a "Consumer" is wanted for 'umpteen dozens weekly throughout the year. The "Agent" (judging on my own experience) should have little difficulty in finding a "Consumer" if the number of eggs lay between two dozen and 40-60 dozen. The price would be arranged directly between the Producer and Consumer, according as to whether wholesale or retail business was being done. The "Agent" would be paid by the Producer a single fixed sum per customer introduced, based upon the number of dozens. And this would be the beginning and end of the overhead charges. If the Producer sent up bad stuff it would be his own loss, while if he gave satisfaction he might get another connection. Surely such an Agent should not be beyond the powers of the S.P.B.A. or Colonel Gilbert to find.

Yours faithfully,
F. J. ROMANES.

ANGORA WOOL FARMING.

Dear Sir,—I have read with much interest in the last edition of "Eggs" a very interesting article on "Angora Wool Farming." It gives details to enable one to estimate the capital required to start it, but no mention is made of the revenue, which, I need hardly say, is just as important. The price per pound of wool (35s.) is no doubt very alluring, but how many ounces will a full-grown rabbit yield in twelve months? Also, what is the life of a rabbit, and is any special feeding necessary? If these details had been given, the article would have been invaluable.

If I am in order, may I ask you to insert the following queries in your next issue of "Eggs"?

(a) What is the estimated capital required to start an Angora Wool Farm?

(b) What is the life of a rabbit?

(c) How many times during the year can a rabbit be combed, and at what age can combing commence?

(d) If surplus bucks are kept separately, will they yield a satisfactory crop of wool?

(e) What is the average annual yield of wool in ounces per rabbit?

(f) Is any special feeding necessary?

Yours truly,
H. F. PEET.

To the Editor of "Eggs."

Dear Sir,—In the issue of "Eggs," dated March 25th, page 205, there is a statement that a pen of Mr. W. M. Golden's laid an average of 220.4 eggs, and that this is an official record for Reds in a laying test in this country.

My son's (R. G. Hall) R.I. Reds in the "Daily Mail" Test, 1919/20 laid an average of 229¼ eggs, with an average of 71½ eggs for the four winter months, so that my son's and not Mr. Golden's birds hold the record.

Moreover, our second season birds in the "Daily Mail" 1920/21 test laid an average of 160 eggs in twelve months, which is also an official record for second season birds of the breed.

Yours truly,
W. HALL.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

FOOD PURCHASE SCHEME.

Many members have written in appreciation of our Food Purchase Scheme, and two have stated that it is the only practicable scheme yet devised to enable the small poultry-keeper to buy his foodstuffs at a reasonable price. This is true, but it is a little disappointing to find that those who were most energetic in demanding that the Council should take steps to supply goods at a low cost have not so far come forward to help in the organisation by attempting to form groups.

We did not expect that we should be able to benefit the large farmers, and the real object of the scheme was to help those who could only buy in comparatively small quantities, and were paying the highest prices.

It is a little astonishing to find that when we are able to offer a sample of pure Sussex ground oats at £12 15s. 0d. per ton, and Clover Meal at £8 15s. 0d., f.o.r., so many of our members are content to pay £17 or £18, or £12 and £15.

Much has to be done before we can perfect the scheme, and we need the co-operation of our members. We are endeavouring to arrange with firms in all parts of the country so that the freightage may be reduced to the minimum.

One effect of the scheme has been that millers in various parts of the country have already lowered their prices in order to retain their customers, and in some cases have cut prices in order to compete with us.

APPLICANTS FOR MEMBERSHIP.

Croker, L. A., Logandene, Leverstock Green, Hemel Hempstead, Herts.
Lloyd, Mrs. C. Coles, Ralphs Ride P.F., Bracknell, Berks.
Cleghorn, Mrs. Morag, Drumrossie, Insch, Aberdeenshire.
Davidson, G., Lane Head, Watermillock, Penrith, Cumberland.
Ridge, C., "Head Weir," Milton Damerel, Brandis Corner, N. Devon.
Chamberlin, Miss B., Witton Rectory, Norwich.
Tweedie, G. W., Riseborough Hall, Pickering, Yorks.
Woolston, Arthur J., Great Oakley, Kettering, Northants.
Dobrashian, Dr. G. M., 12, East Circus Road, Nottingham.
Robbins, John, P.O. Box 61, Mossell Bay, C.P., S. Africa.
Ripper, J. T., Lynn Road, Swaffham, Norfolk.
Silver, Miss D. D., Byeways, Harting, near Petersfield, Hants.
Wright, Mrs. N., Hodore Farm, Hartfield, Sussex.
Coltart, Mrs. B. M., The Orchard, Plumstead, Aldborough, Norwich.
Heley, E. Freestone, Tollgate House, Wing, Leighton Buzzard.
Shaw, Mrs. L. L., The Cottage, Morville Heath, Bridgnorth.
Ashley, Mrs. B., Granby Farm, Honington, Shipston-on-Stour.
Manley, Maj. J. C. M. (O.B.E.), Blackberry Mead, Lingfield, Surrey.
Gracie, T. S., Heath Hill Farm, Race Hill, Brighton.
Smith, Clifford, Glen Lee, Park Lane, Keighley.

KEIGHLEY AND DISTRICT BRANCH.

The monthly meeting of the above Branch was held in the Temperance Hall, Keighley, on April 1st, at 7.45 p.m. The President, Mr. Frank Snowden, was in the chair. There was a good attendance, about one hundred members and friends being present. Minutes of last meeting were read, confirmed, and signed. Five new members were elected for membership to the Branch. A resolution with regard to the Keighley and District Branch of S.P.B.A. having a section of their own in the Yorkshire Federation International Laying Test at Otley, 1925-1926, was left over until the next monthly meeting, when the matter will be fully discussed. At 8.30 p.m. Mr. Alf. Sawyer commenced to address the meeting. His subject was: "The Do's and Dont's in Chicken Rearing." He described the methods successfully used on his own farm at Holmroyd, Crosshills. A good many questions were asked, most of which he was able to cope with. A vote of thanks was tendered and accepted. Mr. Snowden announced that the Secretary, Mrs. Wilson, would be in attendance at the Laying Test at Otley on April 11th, from 2 to 4 p.m., and would be pleased to show the members and friends round. The meeting closed at 9.45 p.m.

(Mrs.) A. WILSON, Hon. Sec.

THE LANCASHIRE UTILITY POULTRY SOCIETY.

INTERNATIONAL EGG-LAYING TEST, 1924-25.

Fifth Month Report (February 7th to March 8th).

The report for the above period is a very satisfactory one. There has been an increase in eggs laid, which have been of good size, colour and texture.

The health of the birds is good, there being no disease; also, the birds which have been in moult are coming on to lay.

The whole flock throughout are looking well, and some good pen and individual records made.

SUMMARY OF LEADING PENS.
Figures are Eggs and Points respectively to date.

Large Breeders. Section 1.—W. Crabtree, Twiston, 903, 919; F. Snowden, Cowling, 763, 802; R. Marshall, Forton, 834, 799.

Large Breeders. Section 2.—J. R. Hull, Thornton-le-Fylde, 765, 837; F. Harvey, Bretherton, 806, 799; Mrs. M. Molloy, Crumlin, 733, 749.

Large Breeders. Section 3.—F. R. Welch, Bewdley, 733, 748; W. Hamnett, Blackpool, 746, 742; Miss H. Bell, Welwyn, 602, 625

Large Breeders. Section 4.—F. Snowden, Cowling, 755, 792; R. Rodwell, Nelson, 742, 768; J. Thompson, Shrewsbury, 767, 755.

Large Breeders. Section 5.—S. Street-Porter, Ely, 761, 792; R. Rodwell, Nelson, 822, 794; G. B. Metcalfe, Lechlade, 699, 702.

Small Breeders. Section 6.—J. W. Lodge, Holmfirth, 448, 449; Dr. J. E. Helm, Newchurch-in-R., 437, 463; P. H. Sephton, Rufford, 420, 431.

Small Breeders. Section 7.—C. C. Humber, Hoole, 438, 424; T. Lumb, Hebden Bridge, 411, 415; W. Lyon, Holmeswood, 364, 379.

Small Breeders. Section 8.—T. Rossall-Sandford, Shrewsbury, 460, 479; Col. S. Sandbach, Abergele, 277, 275; W. J. King, Leamington Spa, 204, 198.

Small Breeders. Section 9.—F. F. Fisher, Tarleton, 476, 494; G. W. Sutcliffe, Hebden Bridge, 450, 431; W. Machin, Huntington, 416, 424.

Small Breeders. Section 10.—W. A. Lansley, Whitchurch, 434, 447; O. Rawlinson, Waverton, 361, 357; J. Stuart, Garstang, 358, 362.

BOARD OF AGRICULTURE FOR SCOTLAND EGG-LAYING TEST, 1924-25.

Report for Fifth Month—4th Feb. to 3rd March, 1925.

During the fifth period the weather showed little or no improvement over the third and fourth periods, it being exceptionally wet with cold N.E. winds. Owing to the inclement weather, it was again at times found necessary to have the birds kept intensively. They have maintained their excellent health, and many of the birds, which moulted last month, have almost completed the change of feathers. Broodiness has not so far been prevalent, only three birds having been removed to coops during the period.

The total number of pullets' eggs laid during the period has been 5,505, an average per bird of 13.97, as compared with 5,299, an average of 13.31 last month, the average per bird since the beginning of the Test standing at 66.71. The highest individual record for the month under review is 28 eggs laid by Mr. Scott Miller's Light Sussex Pullet, No. 547 (Pen 92), which has been mentioned in the two previous reports. The second is 25 eggs, all first-grade, laid by Mr. R. Prentice's White Wyandotte Pullet No 336 (Pen 61). Mr. J. Prentice's pen of White Leghorns (winner of the Scientific Poultry Breeders' Association cup, Pen 46) has regained first place in the Test with a score value of 509.

There has been an increase in the number of eggs laid in the Duck Section. the total for the four weeks being 1,420, an average of 13.39 per bird, as compared with 1,124, and an average of 10.5 last period.

SUMMARY OF LEADING PENS.
Figures are Eggs and Points respectively.

Section 1. White Leghorns.—J. Prentice, 514, 509; J. W. Dobbie, 511, 479; J. and W. Purdie, 493, 473.

Section 2. White Wyandottes.—R. A. Oliver, 481, 478 W. Bradbury, 522, 453; Lady Astor, 373, 373.

Section 3. Rhode Island Reds.—Mrs. Logan, 487, 485; H. P. F. Roche, 482, 480; J. A. Terrace, 566, 386.

Section 4. Non-Sitters other than White Leghorns.—R. Scott Miller, 379, 379; A. Watson, 378, 378; G. B. Metcalfe, 371, 371.

Section 5. Sitters other than R.I. Reds and W. Wyandottes.—J. Adams, 488, 488; O. C. Brown, 425, 425; Mrs. I. Craig, 327, 327.

Section 6. Ducks.—H. S. Godsmark, 530, 485; Miss Harrison Bell, 324, 301; R. A. and A. M. Johnson, 292, 291.

PRESTON AND DISTRICT UTILITY POULTRY SOCIETY.

The Eighth Annual Six Months' Laying Competition was held at Woodland Grange, Penwortham, under the management of Mr. J. Rainford, who reports all birds in good health.

Sixth Month and Final Report.

A more detailed report will be issued later. Figures are Eggs and Points respectively.

Section 1. White Wyandottes.—J. T. Finn, 447, 4240; J. R. Dawson, 380, 3702; J. Hodgson, 389, 3638; G. H. L. Armstrong, 344, 3440; H. Pinder, 315, 3120; A. G. V. Ermen, 300, 2888; H. Holden and Sons, 289, 2882; J. Crompton, 301, 2774; Mrs. M. Walker, 218. 2174.

Section 2. A.O.V. Heavy.—C. C. Humber, 397, 3898; J. J. Rawlison, 312, 3080; A. G. V. Ermen, 314, 3066; N. Swarbrick, 305, 2958; R. Moon and Sons, 316, 2818; Mrs. M. Walker, 225, 2232; Mrs. M. Powell, 188, 1854.

Section 2. White Leghorns.—A. G. V. Ermen, 277, 2700; R. Moon and Son, 273, 2668; H. Holden and Sons, 256, 2552; J. C. Barnes, 223, 1850; E. Collier, 197, 1802; J. Fletcher, 156, 1450.

Market Report.

:NISTRY OF AGRICULTURE RETURNS, WEEK ENDING ENDING, FRIDAY, 3rd APRIL, 1925.

RAIN AND FEEDING STUFFS.—The moderate supplies of lish wheat on offer meet a dull trade, and prices are again r at all markets, good milling samples averaging 12s. 5d. cwt. as compared with 12s. 8d. last week. Imported wheats in slow demand, and prices at Bristol and Hull have de- ed from 2d. to 6d. per cwt. on the week; at London and rpool, however, values have fluctuated, but average quota- s over the week are slightly higher at the latter market. ish and imported feeding barleys meet a slow demand, but former is unchanged in value, while the latter mostly sell ower prices. Home-grown and imported oats meet a dull iry, but recent quotations are generally maintained. Maize ample supply, and although in only moderate request has nced slightly in price.

ffals are in quiet demand and bran is cheaper at most kets, the reductions at Bristol and Hull being 12s. 6d. and per ton respectively, while coarse middlings at these two kets are 5s. per ton cheaper. Barley meal sells at less ey. Oil cakes are in only quiet demand, and linseed cake is 5s. to 10s. per ton cheaper, while cotton-seed cakes sell lightly less money.

ILLERS' OFFALS.—Bran (British): Bristol, £8 7s; Hull, 2s; Liverpool, £8 5s; London, £6 17s. Broad Bran: Hull, 7s; London, £8 10s. Middlings—Fine (Imported): London, 7s; Coarse (British): Bristol, £8 15s; Hull, £8 5s; Liverpool, s; London, £7 15s. Pollards (Imported): Bristol, £7; Hull, London, £7 5s. Rice Bran: Bristol, £10; Liverpool, £9 2s. L.—Barley Meal: Bristol, £11 17s; Hull, £11 10s; London, Maize Meal. Bristol, £11 2s; Hull, £10 15s; Liverpool, £10 London, £10 10s. Maize Meal (S. African): Bristol, £10 10s; , £10; Liverpool, £9 10s. Maize Germ Meal: Bristol, £10 15s; , £10 5s; London, £9 10s. Maize Gluten Feed: Bristol, £12; lon, £10 5s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 10s; rpool, £10; London, £9 15s. Bean Meal: Bristol, £13 15s; , £11 13s; London, £13 5s. Fish Meal: Bristol, £21; Hull, £20; rpool, £19; London, £20 10s.

EGGS AND DEAD POULTRY.

ull offerings of eggs have been forward, and trade was t early in the week, but an improved demand is now eable and quotations are only slightly reduced for one wo descriptions. The supply of best quality chickens is t of requirements, and those available make more money.

Veek-end Prices—Eggs (per 120): British, 13s 3d, 12s 3d; Irish, 0d, 12s 6d; Danish, 14s 6d, 14s 0d; Dutch, 14s 0d, 13s 6d; ian, 12s 0d, 11s 3d; Egyptian, 9s 9d, 9s 3d; Belgian, 13s 3d, d; Italian, 12s 9d, 12s 3d; Chinese, 13s 3d.

ead Poultry (per lb.): Fowls—Surrey, 2s 3d, 1s 9d; Irish, , 1s 2d; Others, 1s 10d, 1s 5d. Ducks, 2s 0d, 1s 4d. Geese, , 1s 0d. Turkeys, 1s 6d, 1s 2d.

EGGS.

er Doz.—Ashford: First, 1s 5d; Second, 1s 4d. Birmingham: , 1s 5½d; Second, 1s 3½d. Bridgwater: First, 1s 4d; Second, d. Chelmsford: First, 1s 4½d; Second, 1s 3d. Doncaster: , 1s 2d. Dorchester: First, 1s 3d; Second, 1s 2½d. Exeter: , 1s 2d. Hereford: First, 1s 2d. King's Lynn: First, 1s 2d; nd, 11d. Llandilo: First, 1s 0d. Mold: First, 1s 0d. Newport): First, 1s 3d; Second, 1s 2d. Norwich: First, 1s 2d. Os- y: First, 1s 2d; Second, 1s 1d. Penzance: First, 1s 0d; nd, 11d. St. Ives (Hunts): First, 1s 2½d; Second, 1s 1½d. bury: First, 1s 2d; Second, 1s 1d. Skipton: First, 1s 3d. o: First, 1s 1d. *Carlisle: First, 1s 3d. *Derby: First, *Ipswich: First, 1s 3d. *Lincoln: First, 1s 3d. *Shrews- : First, 1s 3d; Second, 1s 2d. *York: First, 1s 4d; Second, t.

FOWLS.

er lb.—Birmingham: First, 1s 6d; Second, 10d. Doncaster: , †5s 0d; Second, †4s 0d. Exeter: First, 1s 9d. Hereford: , 1s 8d. Llandilo: First, 2s 1d; Second, 1s 8d. Newport): First, 1s 7d; Second, 1s 3d. Truro: First, 1s 6d. *Derby: , †6s 9d. Second, †4s 0d. *Ipswich: First, 1s 9d. *Lincoln: , †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, *York: First, †5s 6d; Second, †4s 6d.

DUCKS.

er lb.—Exeter: First, 1s 6d. Llandilo: First 2s 1d; Second, *Ipswich: First, 1s 7d.

At these markets the prices quoted are for sales by pro- s direct to consumers. At other markets prices are those to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, April 8th, 1925.

CONTENTS.

EDITORIAL 225
HARPER-ADAMS' AGRIC. COLLEGE LAYING TRIALS ... 226
THE INTERNAL MECHANISM OF THE EGG-LAYING MACHINE 226
S.P.B.A. ... ... 227 and 238
ANSWERS TO QUERIES 229
POST-MORTEMS 231
SIXTH MIDLAND LAYING TEST 232
MIRFIELD AND DISTRICT LAYING TEST 232
BEES 232
CORRESPONDENCE 233
LANCS. INTERNATIONAL EGG-LAYING TEST 238
BOARD OF AGRIC. FOR SCOTLAND EGG-LAYING TEST ... 238
PRESTON AND DISTRICT LAYING COMPETITION 238
MARKET REPORT 239

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscriptions to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

Easter Holidays,

1925

OWING to the EASTER Holidays, Advertisements intended for our issue of 15th April must be received not later than FIRST POST Thursday morning, April 9th.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS,	per line, extra 9d.
DAY-OLD CHICKS,	,, ,, 1s.
DAY-OLD CHICKS	,, ,, 1/6

The number of letters, punctuations and spaces between words should be totalled, when the following table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount, will not be inserted.

Advertisements must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office

FIRST POST FRIDAYS

for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY. AND TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. **BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS,** for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent. and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

EGGS.

FOR SALE.

A. A. Peake, M.S.P.B.A., Pedigree P.F., Hilderstone, Staffordshire. White Wyandottes (Hunter). R.I.R. (Boucher-Measures). Individual scores of 70 eggs in 90 winter days is quite usual with my birds. Satisfied clients are sending repeat orders. Eggs, 6s., 9s., 12s. per dozen, u.r. (or 15).

Retarded chicks don't pay

Chicks that are retarded in their early stages never pay—they never make profitable layers nor good breeders.

FUL-O-PEP Growing Mash starts chicks growing instantly because it is so finely ground, easily digested and perfectly balanced.

Slow or weakly growth indicates ill health. Such chicks, when mature, can never successfully reproduce their kind, as they lack stamina and fertility.

It pays to feed the guaranteed FUL-O-PEP Growing Mash, sold only in the red-striped bags, because then you know your chicks are properly fed. The FUL-O-PEP way gives quicker growth, better health and makes chick rearing easier and more profitable than ever before.

FUL
TRADE **-O-** MARK
PEP
GROWING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE

For complete information on this vital subject, write for the revised edition of the FUL-O-PEP Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

This book has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Made and guaranteed by Quaker Oats Ltd., 11, Finsbury Sq., E.C

EGGS.

FOR SALE.

Eggs for Incubating from fine floc Goldens' and Measures' R.I.R.'s; £2 10s. a 100. Other breeds kept: W. L.S., Anconas, and Houdans. Send catalogue.—Gardner, Aldington, Kent.

Large Brown Eggs for hatching, ex tion and Utility Barnevelders; 6s. 6d. 6d., 20s. dozen; u.r.—Sydney Hiller. Sta Herts.

Barnevelder, Middleman-Brienen sta prize-winning; big brown 250-egg st 10s. 6d., replacements.—Lonnen, St. Dorset.

Fertile Hatching Eggs from Bred-t Layers. White Leghorns, Anconas dozen, carriage paid.—West, Crossing try Farm, Thornton, Blackpool.

White Leghorn Eggs; 5s. per 15, Every bird trap-nested. Also White W dottes and Rhode Island Reds.—G Tootall, M.S.P.B.A., Thorncliffe Po Farm, Barrow-in-Furness.

Hobson's Utility Minorcas; Selected 10s. 6d. for 15. — H. Hobson, Wren House, Pulverbatch, Shrewsbury.

Eggs for Hatching, 5s. doz., carriage Champion Utility White Wyandottes, Special, h.c., Appleby; White Legh Adams-Linkie's; dam's record 280. Leghorns, 292. Instant despatch. Graham, Dufton, Westmoreland.

White Wyandotte Eggs from special ing strains; 5s. 6d. doz. Quantities che —Barker, Coulsey Poultry Farm, S Eye, Suffolk.

White Wyandottes (Barron's Int tional Winning Strain, and 287-Egg St Sittings 6s. per dozen, or 15, no re ment.—Stanley Cooper, Fulbrooks, port.

Eggs for Sitting. R.I.R.'s, from sel stock; 10s. and 8s. Also Sittings, K Campbell Ducks; 8s.—Mrs. Muirhead ner, S.P.B.A., Gazeley Poultry Farm, Newmarket.

Hatching Eggs from selected Utility Sussex, White Leghorns, White R Ducks; 6s. dozen, or fifteen; carriage —Mackintosh, Muirs, Rhynie, Aberdeen

Barnevelder Eggs (Baroness Brie from 7s. 6d. dozen. White Wyand (Cam-Barron), from 6s.—Mrs. Staff, Manor House, Burston, Diss, Norfolk

White Leghorns. My birds are from with records of 262 to 283. Can supply by return at 6s. 6d. dozen. Carriage p Arthur P. Fenton, Laurel House, Bir Leeds.

BARNEVELDERS AND GATIN
Imported Birds. Sittings of 15 carriage paid, 8s. 6d.
MRS. RADCLIFFE, M.S.P.B.A
Burgate, Fordingbridge, Salisbury

BLACK BRESSE.

Eggs from trap-nested hens, mate prize cock; 15 for 10s. 6d.; no replacen —Miss Simson, 85, Beaconsfield V Brighton.

PHILIP CLAPHAM.

"Weather abnormally wet" re Gloucester Trials, and yet my Wyan there lays 86 firsts (no seconds) in months, beating all breeds. Silver there last year. Catalogue of hat eggs free. No fancy prices. — Sh Farm, Lyonshall, Herefordshire.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association
WEDNESDAY, APRIL 15th, 1925.

Editorial.

THE VITAMIN MYSTERY.

In a recent issue of "Eggs" comment was ıade on the "Vitamin Mystery." This, in refernce to the experiments on rats at the Lister ıstitute, and Dr. Hector Munro's statement that Vitamins are nothing more or less than stored unlight." We ventured to point out that the ırther investigations take us, the more confused e become on the subject of Vitamins. It may e that we are mistaken, but to the lay mind the onclusions of the scientists are in the highest egree contradictory.

There is a doubt as to the existence of ıore than one vitamin, and we have at present laims made for six—A, B, C, D, X, and also a itamin in tea, which is **supposed** to have 300 mes the life-giving properties of Yeast. One lmost feels relieved that no definite claim is made. t is only **supposed**; "X" is the vitamin of reprouction. Rats fed on foods devoid of this vitamin rew and thrived, but the males cannot generate r the females bring forth young.

What are we to believe from all this? Is it not ossible that in the highly artificial diets, which re used for the purposes of experiment, that a odily condition is produced which may account or this inability? Is it definitely certain that it ; due to a deficiency of a certain food constituent? t is singular that all the foods which are said to ontain vitamin "X" are also those which con-ain vitamin "A," the single exception being cod ver oil. How is it we are sometimes able to ure leg weakness with foods said to contain itamin "A" and at others with foods containing itamin "B," and at others we get leg weakness ı rations where special provision has been made or both these vitamins?

Professor Eddy, of Columbia University, stated hat a vitamin is not a food, but a necessary factor ı nutrition. The most graphic illustration he had ome across was this:—"The vitamin is to the ıuman engine what the electric spark is to the gasoline engine," and he produced from his pocket a small vial, containing a small quantity of white powder. It created a sensation, for it was the first vitamin that anyone had seen or handled. An amount of no more than three-hundredths of a milligram, which is about as much of the powder as could be caught on the point of a pin, given every day to a young rat, stunted by living on a deficient diet, would cause it to grow again at a normal rate.

STORED SUNLIGHT?

Professor Evans extracted vitamin "X" from wheat germs, and obtained it as an oil of high potency. However, it is present in such small quantities that only a few flakes were secured from a ton of grain. These are the wonders of science.

Returning to the stored Sunlight. Oranges and lemons are said to contain more of this than any other fruit or vegetable. In two tables of foods we have before us, both these fruits are shown to be very deficient in both "A" and "B" vitamin, but rich in the anti-scorbutic factor "C." In the experiments with the rats at the Lister Institute, was it deficiency of the anti-scorbutic factor which caused them to lose weight, and did the oranges supply this factor and enable them to regain it? It would seem not. That is, we cannot attribute their recovery to vitamin "C."

The newer nutrition is rapidly revolutionising our ideas of food values. Mr. J. Ellis Barker describes Dr. Hindhede, a Dane, as the "greatest food reformer living," and contends that he has shown the utter worthlessness of the teachings of the Liebig School. So far from giving pride of place to protein, Dr. Hindhede places the composition of foodstuffs according to their value as follows:—

(1) Unknown food elements.
(2) Mineral elements.
(3) Carbohydrates.
(4) Fat.
(5) Protein.

Mr. Barker has no good word to say for the German chemists, and attributes many of the diseases to which humanity is now subject to the slavish addiction to their doctrines. The consumption of protein rich food, he states, has quadrupled because of the teachings of the Liebig School which have been uncritically endorsed by chemists, medical men, writers of cookery books, and cooks throughout the world, with the result that we are protein-poisoned and vitamin-starved.

Dr. Hindhede claims that while others experimented with rats, rabbits and pigeons, he experimented with **men.** Lack of space forbids my entering into details of these experiments here—the few that are mentioned in the article are astounding. The German chemists have asserted that the minimum amount of protein on which a healthy man could exist was 120 grammes. Dr. Hindhede scouts this idea, and submits proof that 20 grammes is ample. Writing of bran, he says:—

> "Bran contains not only the vitamins which the endosperm lacks, but also the protein substances that supplement the deficiencies in the endosperm. Bran can replace meat and milk. In other words, it is one of the most valuable articles of nourishment. It has certainly been believed that bran is indigestible for man, but our thorough experiments have—to our surprise—shown us that man, as well as the domestic animals, can digest bran. The correctness of these results has been confirmed by Koansson in Stockholm and Wiegner in Zurich. The Danish war ration was largely based on the value of bran."

Dr. Hindhede points out that the mineral salts contained in food are actually more necessary than the food itself, for experiments have shown that animals which are fed on demineralised foods die more rapidly than those which received no food at all.

We can at least claim that in these columns the importance of the mineral salts, the value of bran and the danger arising from an excessive amount of protein, has always been impressed upon our readers.

Dr. Hindhede's book has not yet been translated into English, but enough has been said to show that his ideas are very revolutionary. They afford us food for thought, and they may strongly influence our ideas as to the feeding of poultry.

BRIGHTON STOCK TEST REPORT, FEBRUARY, 1925.

R. Mummery (11 W.W.), 682 pts.; Besford Egg Farm (9 W.W.), 614; Countess Buxton (14 W.W.). 901; Chisbury P.F. (13 W.W.), 939; Soames (9 R.I.R.), 682; Capt. Woodford (14 R.I.R.), 1030; B. Glendenning (5 W.L.), 361; Capt. Close (13 W.L.), 916; Misses Allen Smith (14 W.L.), 1044; Scott Miller (8 W.L.), 591; Capt. Beckett (12 W.L.), 861; Mrs. Gibson (13 W.L.), 930; Chisbury P.F. (10 W.L.), 696; D. Brown (10 W.L.), 677; Major Shepherd (15 W.L.), 1041; D. Gunston (12 W.L.), 825; Dukes P.F.)17 W.L.), 1038; W. Bradbury (16 W.L.), 1125; Miss Ransford (15 W.L.), 951; Mrs. Gibson (17 B.L.), 1063; Dukes P.F. (18 B.L.), 1170; Misses Allen Smith (13 B.L.), 799.

Menadews, St. Clements, Truro.

Dear Sir,—"Eggs" is packed full of information from cover to cover, and contains more practical information than any two contemporary journals.

Thanking you, yours faithfully,

(Signed) L. CHOAK.

Utility Duck Club Notes.

By **HUGH B. CARRINGTON.**

April, 1925.

When these notes appear we shall all be in tl
thick of the hatching season, and, therefore, a fe
remarks about the breeding birds may be helpfı
It is an important time for the duck owner
keep his eyes wide open and his mind resolute
set against soft-heartedness with his breedir
stock; one might almost say that it is the tin
to begin selecting the birds to breed from in 192

First and foremost about the size of eggs. Pe
sonally I have a deadly abhorrence of the 2-2¼ o
duck egg. The good duck's nature is to lay
large egg, and I consider that an immense amou
of damage is being done to the stamina of ducl
by breeding from the small egg. Let me confe
that in years gone by this very error, and tl
worse error of hatching from imperfect eggs, h
been my own undoing. Without any exception su
errors recoil on the head of the person who cor
mits them. No one would dream of sowing moulc
seed and expect to get a good crop from it, ther
fore why incubate inferior eggs unless you wi
to produce even more inferior ducklings? O
more word about the size of eggs. A big duck eg
is a better sales proposition than a small one—
least that is my personal experience—therefo
why deliberately throw away this natural advan
age by breeding from the small-egg layer? F
the good of the industry I should like to think th
no egg under approximately 2½ ounces was ev
set under a hen or in an incubator.

To return to "selection." Really good ducl
will by now have been laying heavily for son
months, possibly almost without a pause sinc
October or November last. If they really are goc
birds from a breeding point of view the eggs the
should still be laying will show no signs
deterioration, they will still be large, of perfe
shape and texture. If they are not so, all idea
breeding from them should at once be given
for ever. Do not be tempted to think that whe
the offending bird has had a rest all will be we
again; it is almost a certainty that the weaknes
will recur. Very likely, for a short time, she wi
produce a perfectly satisfactory egg, but the ol
faults will almost invariably show themselve
again, and it will have proved a waste of time
have kept that bird with the idea of breeding fro
her.

It is on account of the extreme value of selectio
that I persistently, in season and out of it, strongl
urge the advantage of trap-nesting or in som
way individually recording the birds. Even wit
out trap-nests something may be done if sma
numbers only are run together. For instance,
might be possible with half a dozen birds to singl
pen them for a few nights, study the class of egg

a bird lays, and as soon as it is possible to itify the eggs let them all run together again simply watch for the appearance of the erent eggs daily. Eggs vary very much in , shape, texture, and so on, and this sugtion is not half as impossible as it may sound. course, it will be necessary to put distinguishing oured rings on the ducks' legs before making experiment.

election at this season may, however, go a further than this. The appearance of the ks themselves should be taken into account, if noticed that a bird is, as it were, shrinking it should be watched carefully. Heavy layers urally become lighter in weight, as, of course, colour also as the season advances, but if the cess goes too far it is certain that the duck ch has laid itself to a shadow will never be any as a breeder.

o my mind, the duck which lays round about eggs in its pullet year is and always will be most valuable from a breeding point of view. re are, of course, exceptional birds with much ner records than these, which pass every test which you can put them; these are the ones are always hoping and trying to produce. Let not substitute for them the inferior article with igh record of production but of low quality. re should be no "if" with the breeding stock.

further Council Meeting to discuss the Duck Campaign was held on March 25th. Mems will be glad to hear that a definite plan was pted, full particulars of which will be forded to each of them as soon as it is possible get out the necessary circular.

WYE COLLEGE DUCK LAYING TEST, 1924/1925.

Ield in conjunction with the N.U.P.S. and U.D.C. at the h-Eastern Agricultural College, Wye, Kent.

This Test, which commenced on November 1st last, extends a period of 48 weeks. Each entry consists of five ducks, of h there are 155 in all. All the ducks are trap-nested, and run as one large flock on free range over grass land.

For the purpose of awards the birds are divided into four l classes, viz.: (1) Khaki-Campbells; (2) Indian Runners; Buff Orpingtons; (4) Magpies. Separate awards will be made ach class.

The eggs are graded according to weight, a first grade egg g one which weighs 2 ozs. or over. Second grade eggs are e which weigh under 2 ozs., those do not count for awards.

PORT FOR FIFTH PERIOD (Feb. 21st to March 20th, 1925).

There has again been an increase in the number of eggs during the month, the total being 2,697 as compared with last month. This figure gives an average per bird of 17.51 , and brings the average per bird to date up to 59.22 eggs the five months (140 days). The month's average is satisory considering the cold winds which have prevailed during month.

The health of the birds during the month has been good. ial moulting is still prevalent. No deaths have occurred.

Miss Harrison Bell's Pen No. 11 (Khaki-Campbells) this month ins the leading position in the whole of the Test, with a e to date of 515 first grade eggs, or an average per bird of eggs.

The leading pens in the Breed Sections are:—

Khaki-Campbells.—Miss Harrison Bell's Pen No. 11, 515 pts; M. A. Gibson's Pen No. 9, 427.

ndian Runners.—Mr. W. R. Partridge's Pen No. 19 (Whites), ots.; Messrs. R. A. & A. M. Johnson's Pen No. 13 (Whites) 363.

Buff Orpingtons.—Capt. W. O'G. Cochrane's Pen No. 22, 351 Mr. C. C. Chittendon's Pen No. 24, 228.

agpies.—Mr. C. N. Goode's Pen No. 26, 260 pts.; Mr. J. G. iamson's Pen No. 30, 244.

Competitors and others may visit the Test on Wednesdays appointment only.

F. W. RHODES, Poultry Department.

Answers to Queries.

By the **EDITOR.**

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

J. T. (Calbrook) writes to ask what to do to prevent or cure his R.I. Reds which seem to be losing their feathers on top of their heads behind the comb. He describes the feeding, and states that they are well housed and well fed, and have free range. He also wishes to know if I can tell him if the following is all right to cure tics on young chickens: One part lard, half paraffin, half flowers of sulphur, and half part vaseline. I think the quantity of paraffin here is excessive. Many chicks are killed by its use, and I would much rather use something safer, such as two per cent. of Izal. With regard to the hens losing their feathers at the back of the comb. He should examine them for lice or insect life of any kind, but I do not think this is the case. Good layers often lose the feathers just at the back of the comb. At any rate, if he were to soak the spot with a two per cent. solution of Izal it would put matters right if lice or any other insect life are the cause

---

K. B. H. (Hempsey) asks if I would tell her whether duck eggs can be satisfactorily preserved in waterglass. I have heard of this being done successfully, but am compelled to say that in a very large number of cases our readers have reported to me that it is exceedingly difficult, and, under the circumstances, I would not advise my correspondent to try.

H. L. D. (Wexford). The normal temperature of a hen varies between 104.9 and 107.6 degrees Fahr. You are quite mistaken when you say that a hen's temperature rises when she is broody, and in thinking that she is in a fever when she is sitting, you are again mistaken, her temperature being from two to three degrees below normal . (2) I cannot tell you why you have such a high percentage of infertile eggs with your Wyandottes, unless you send me more details. There may be several causes. (3) From what you say I think there has been far too much ventilation in your incubator, and the eggs have dried down too rapidly. Try next time with both felts in until the 19th day, and then remove only one, and do not cool at all.

S. M (Salop). I don't want to be unkind, but is it not really absurd to send me two eggs, and expect me to tell you why your hatch was such a failure? One of these was infertile, and one contained a chick which died about the tenth day. If these are a fair indication of all the unhatched eggs, then the fault lies with the eggs themselves, and not with the incubator. The fact that the temperature rose to 106 degrees for a few hours at the end of the first week in no way explains it.

Interested (Croydon). There are three types of producers—those which lay no eggs during the winter months; those which lay less than 30; and those which lay 30 or more. These three types are represented by symbols, and there are three factors involved:—(1) An anatomical factor, the ovary; the capital letter F. is used to denote this. (2) The first production factor, a primary physiological factor. This, in conjunction with F., makes the bird lay eggs during the winter period—more than zero and less than 30. Its presence is denoted by L1, and its absence by l1. (3) The second production factor—a second physiological factor—which with F. and L1 leads to high fecundity. This factor is denoted by L2, and when it is present, in addition to F. and L1, it makes a winter production of over 30 eggs. I think that is as clear as I can make it to you. No, you are right, I do not believe line-breeding is the right system of breeding for egg production. I believe that the matings should be as wide as possible, providing always that the male has come from a really good dam, and the females are trap-nested with good winter and yearly records. (3) I would not rely wholly on handling for my breeding stock, even I were running a commercial egg farm. No, every bird that lays 30 or more eggs during the winter period is not necessarily a good breeder. (4) Birds which are bred for a specific factor are far more likely to be prepotent than those which are not, because the selected characters are the dominant ones. (5) You are quite mistaken; you did not get single combs with your Wyandottes because the cockerel was of another strain, but because he was impure for rose-comb; that is, he carried the single comb factor. (6) We have no reliable evidence that the neck moult of early-hatched pullets is inherited. I am sorry, but space will not permit my going into the whole question here. (7) I do not think there is the least relationship between eye colour and egg production, and the fact that your best Reds have light eyes in no way proves it; the light eye is dominant to the red, and assuming that your best pullets had light eyes, and you selected these, the majority of your pullets would have light eyes, because if you mated them to a red-eyed cockerel the red eye would be recessive. (8) No, you have got it the wrong way round; excess of feather is not opposed to egg production, egg production does not permit excess of feather. (9) It is quite all right. I
don't mind your thinking me wrong. I can't adr
in this case that I am, and so must repeat that a p
black bird with yellow legs has never yet been br
in spite of what you have seen at shows. There
always some white, although it does not always get
the show pen. (10) No, I really don't mind, but y
are not right, and I am; the yellow leg in the Suss
pullet was not the result of the previous mating of t
pen with the Brown Leghorn cockerel—it was a c
of reversion; the Sussex was bred from the Lig
Brahma, and the latter has yellow legs, and it is n
at all uncommon for a yellow-legged pullet to appear
a flock of Light Sussex. It is the ovary which
fertilised, and not the hen, therefore, it is impossil
for the progeny of the latter mating to be affected
the previous one. (11) Yes, broodiness is inherit
and you would be wiser not to breed from a h
which has so often been broody. I cannot spare y
any more space this week. You can resume yo
cross-examination when you like.

S. (Rugeley). The cheapest laying mash I c
give you is:—2lbs. bran, 4lbs. thirds, 2lbs. ma
meal, ½lb. meat and bone meal, and ½lb. soya be
meal. This is a dry mash always before the birds.
Yes, it is true that the chicks which are likely
develop into the best layers are those which feath
most quickly down the back. (3) I would not bre
from a hen which persistently lays thin-shelled eg
Some hens are constitutionally unable to assimila
enough lime to enable them to shell their eggs proper
and the chicks from their eggs are almost invarial
weakly.

F. R. (Bristol). In spite of what the chemist t
you, you need not be alarmed; the sulphate of copp
will not have any ill-effect on your birds in the d
advised. It is an old and well-tried remedy, and
would not recommend it if it were not. Fowls a
apparently immune, or at least, more strongly res
tant to poisons which would have a serious effect up
mammals. (2) Your feeding is too stimulating; th
is the cause of the thin-shelled eggs, and all the oys
shell in the world won't help matters if you do n
alter it. Reduce the maize by one part and the f
meal by half a part.

"Essex" (Witham) writes:—"May I ask y
to answer the following question: I ran a 50-eg
Hearson incubator—eggs our own—and the
sult has been almost nil. May I state I am no
novice at incubator work, and in the same pl
and at the same time I set two other machines
Tamlin and a Phipps, and in both of these
hatches were good; but they are different eg
in them, and not our own. I ran the machine
104 first, and 105 after, as from practise I h
found that best in winter time. The temperat
of the room was never over 50, and often was o
45. Out of 50 eggs incubated I got 13 chic
Ten had failed to absorb the yolk, but they s
managed to struggle through and to die the f
lowing day, and on opening the remaining lo
found that they nearly all had failed to abs

yolk. There was no lack of moisture, as I t the tray full throughout the hatch. Myself, hink it is owing to weakness of the germ, as eggs were quite fresh. I may state that the s are two-year-old, running with cockerels on range on a five-acre field—an ideal place."— ssex" has not given me much information. himself attributes it to weakness of germ. If t were the case I should have expected a large nber of infertile eggs. He says there was no k of moisture as he supplied it from the first, the question is whether there was too much isture and not sufficient ventilation; that is at I am inclined to think. I have frequently iced that when there is an excess of moisture l poor ventilation, the chicks do not absorb the k. If I were "Essex," I should try and get ter ventilation in the incubator. With well-tured hens and vigorous cockerels running over ve-acre field there should not be much occasion complain of weak germs.

. M. (N.B.) has had a disastrous hatch. His k consists of two and three-year-old Wyan- te hens, mated to vigorous males. Very few the chicks matured, and there were a number addled and clear eggs. Except that he is using ery high percentage of fish meal—twice the antity needed—I can see nothing wrong with feeding, and this, in itself, is not sufficient to ount for the failure. I am inclined to suspect t the hens are in an overfat condition. There uld appear to be no other cause—we cannot me the incubator. It is too late in the season mend matters now. Wyandottes hatched the ter end of April are not, as a rule, profitable g producers.

/. R. (Ludlow) writes that he has some Feb- ary hatched chicks which are not thriving, and asks me what to do. It would have helped had sent some details as to feeding, etc. There is possibility of overcrowding, insect life, stale ound, bad feeding, badly ventilated brooders, ., etc. These causes he must consider. He l be pretty safe, however, if he moves them fresh ground, and gives them a couple of tea- onfuls of cod liver oil to every pound of mash. should examine them for insect life, and see re is no overcrowding. When you want advice ain, "V.R.," send more details.

Banham, Attleborough. Norfolk.
14th February, 1925.

ear Sir,—Seeing week by week in "Eggs" the appreciation wn by the testimonials of the readers of your excellent paper, not to mention the S.P.B.A., I think it about time I added name. Since becoming a member of the S.P.B.A., and sing the columns of "Eggs," I feel I have learned a lot of science of poultry keeping, and cannot praise your society paper too much.

hanking you again.

Yours sincerely,
GERALD L. CASTLEDEN.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

FROM SOUTH AFRICA.

I have received two very interesting letters from South Africa. In the one, Mr. Pollard, writing from Uitenhage, says:—

> "Our problems here are very different to yours at home. We never see leg weakness. I believe the sunshine is entirely accountable for that. Rearing chickens is easy, yet they are liable to colds when first placed into their laying houses—units 20 ft. x 13 ft. each, about 80 birds. Prior to going into laying houses the young stock will roost anywhere in the draughtiest of places, and take no harm. Our greatest trouble here is water. We have a presumably never failing river, yet it has only flowed for six weeks since December, 1923. We pump salty water from a small lagoon. Strangely, when used to this the fowls seem to prefer it. When the river did come down for a few weeks—good fresh water—the egg yield dropped quickly, and the fowls drank far less water. We are still in the grip of one of the worst droughts on record; other parts of the country have had rain in abundance, we have been missed. We give always Lucerne meal, also small quantities of Epsom salts. We feed on your mashes just slightly adapted, and considering the circumstances have not done badly."

Mr. Pollard then goes on to say that he has found that R.I. Reds and White Wyandottes are a really good cross. The early-hatched birds mature quickly, grow well, and are very little trouble with neck moult. Also very little broodiness. Yet the Leghorn crosses have been terribly broody. Early-hatched Leghorns go off their lay for neck moult, and are often rather long. Later on he says:—

> "We have just experienced heat 115 degrees in the shade and 137 in the sun on grass."

He lost 66 fowls. In one farm they brought them in from the bushes in barrow loads.

That is the second letter I have had from South Africa in which the writers have drawn attention to the fact that they did not suffer from leg weakness out there. I think this can be wholly attributed to the sunshine. What Mr. Pollard has to say on the subject of the fowls and the salty water is particularly interesting. Salt, we know, is an avian poison, yet these birds could only become acclimatised to it, but seem, after a time, to prefer it to fresh water.

THE POLISH FOWLS.

I have received a copy of the Polish Club Year Book. It is a breed which has certainly lost a good deal of its popularity. They are believed to have been brought here from Holland. They are called Polish, Polands, or Polanders. There is some doubt as to the origin of the name, but we may take it as fairly certain that it is not intended to indicate that Poland is their native country. Some writers affirm that the name is due to a supposed resemblance between the crest and the cap of a Polish soldier's, others that Polish is a corruption of "polled," and that they were intended to be described as "polled." Neither of these explanations is very satisfactory, and the origin of the name must be regarded as a mystery. There are five varieties—the White-crested Black, the Golden, Silver, Buff Laced and White, but only the first and last are well-known in this country. Some exhibition breeders have developed the crest to such an extent that it obstructs the sight, and renders special care of the birds necessary. The effect of the white crest on the White-crested Blacks is very striking. They are fairly good layers of white eggs, which are rather on the small side. Non-sitters, just fair table birds. Not very hardy; they do well in confined runs. They may now be regarded as purely a fancy fowl.

The President of the Club, Mr. H. Hough Watson, states that the best Polish, with few exceptions, are to found to-day in the hands of the Belgian Fanciers.

The club has not a large membership, but new members are joining in a very encouraging manner.

The President states that the opinions expressed that they are a delicate breed do not coincide with his experience, and he recently heard of a Polish Bantam hen dying at the age of 14 years, which had been successful as a show hen in her thirteenth year.

The Year Book is quite an interesting little publication, and those who are interested in the breed should correspond with Major Williams, Tredrea, Perranwell, Cornwall.

SOME STRAIN.

I have received two letters from readers complaining of my remarks under this title in our issue of 1st April. There I definitely stated that pure-bred chicks could not be supplied at 10s. per dozen at a profit, and that those offered at that price are the "veriest rubbish."

My correspondents take exception to this, and have stated just as definitely that it can be done. One writes:—

> "As for myself, I claim to have some of the best bred-to-lay poultry it is possible to get, and can offer chicks at 10s. per dozen that are equal to, or better than, most at three times this amount."

On the face of this I must withdraw my statement that chicks supplied at this price are the "veriest rubbish," but I would like the writer of this letter show me how he can afford to sell chicks from *best bred-to-lay poultry it is possible to get*, at 10s. dozen, and show a profit. Let him go into the r question of the cost of producing those chicks. may argue that it is better for him to sell at this l price than to sell his eggs at, say, 1s. 6d. per doz That may be true, but it does not alter the fact tl chicks from such stock cannot be sold at a profit, such a price, and I am afraid that many of those w do so do not count the cost.

GLOUCESTERSHIRE BRANCH.

This Branch was orginally formed in Cheltenha where its headquarters are, but for the convenience members residing in other parts of the county it h been decided to form sub-branches at convenie centres. Members can meet at their nearest su branch centre, and discuss local poultry matters, etc

On March 26th a meeting was held at the Y.M.C. Rooms at Gloucester, to inaugurate the starting of sub-branch in that city. It was well attended, a some new members were enrolled.

The chair was taken by Mr. G. H. Hollingwort the Agricultural Organiser for the County, and t meeting was addressed by Mr. Fielding Smith, Ba stone Poultry Farm, Bristol, and Mr. R. A. Johnso the Cotswold Poultry Farm, Chalford. The form gave some excellent advice on the best methods adopt to commence Poultry Farming, and Mr. Johns was very interesting and instructive in his address "Hatching and Rearing of Chicks."

The Secretary explained the objects of the meetin and there seems every prospect of a strong local branc being formed.

On April 1st a few of the best known poultr keepers in and near Tewkesbury were asked to meet i the Senior Council School to consider the formatio of a sub-branch in that district. About 15 did s including Mr. F. J. Bacon, the President of th Branch, who presided, and explained the object of th meeting.

The Secretary of the Branch, having put before th meeting the benefit of joining the Association, etc., was resolved to form a sub-branch, and a committe was appointed.

Miss I. C. Steward, of the Northway Grange Tewkesbury, was elected Chairman, and Mrs. Phillip Morgan, of the Old House, Bushley, kindly undertoo the duties of local Hon. Secretary.

Will members who reside in other parts of th county, and think a sub-branch could be formed i their district, kindly communicate with the Hon Secretary of the Branch,

ERNEST A. CRAFT, Wishmoor, Cheltenham.

East View, Irchester, Northants.

Dear Sir,—I wish to take this opportunity to express my ver great appreciation of your paper "Eggs," which has been an is a very great help to me. I often say to my friends, "Whe in doubt on poultry matters turn to 'Eggs.'"

Yours faithfully,

(Signed) HUBERT J FROST.

Modern Poultry Feeding.

By **TOM NEWMAN.**

EG WEAKNESS—COL. NAPIER'S LETTER.

have received the following interesting letter m Col. Napier :—

"Dear Mr. Newman,—I read with interest your remarks in your issue of March 11th, under the heading of 'Modern Poultry Feeding,' where you were kind enough to criticise my recent letter to you.

"Your criticism brings out a point which shows how inexact the Science of Poultry Feeding is, and how difficult it is for any two people to obtain results of the same kind from any given formula, owing to the impossibility of stating accurately the feeding value of any constituent component of any given food or mixture of foods. For instance, in the dry mash formula given in my letter, I state so many parts each of bran, middlings, Sussex ground oats, etc., but I do not specify, nor can I specify, the feeding value of any of the samples of bran, middlings, Sussex ground oats, etc., I am using. Apparently where this mash has failed in my case, is that I state that I use five parts of maize meal, but have omitted to state that it is white maize meal, which you tell me is deficient in Vitamin 'A,' and I have had to make up this deficiency with cod liver oil. Probably had I used yellow maize meal, the cases of 'leg weakness' reported by me might not have occurred. I am glad to say that since writing my previous letter, no further cases of 'leg weakness' have occurred.

Since I began writing this letter two local poultry farmers have called, and tell me they have read my letter as published by you. They both had 'leg weakness' in their flocks; one used it successfully because he had taken the illness in time, the other had found it ineffective because his birds were too far gone to be cured.

The more I have to do with the raising of chickens, the more I feel sure that we will never be really successful in rearing until we arrive at a food which supplies all the necessary elements for rapid growth and nourishment of the chickens without irritation of the digestive tract, and this is a subject, together with the standardisation of food values, which I think the National Poultry Institute (which was so well advertised a year or two ago, and of which we now hear so little) might well investigate."

I must disclaim any intention of criticising Col. Napier's letter; my comment was only intended to bring out other points in connection with the mystery. I am not at all sure that yellow maize meal would have prevented leg weakness, although we are told it contains the vitamin fat soluble "A," and that white maize meal is deficient in this constituent. If the vitamins are "nothing but stored sunlight" it would be interesting to know why the one variety of maize can "store" it and the other not. The real point is, whether the trouble is due to a deficiency of the vitamin or not. On this point I am not satisfied, would the cod liver oil allay the irritation in the digestive tract to which Col. Napier refers? It is possible, but in that case we might expect the same result from linseed oil which, we are told, is deficient in the vitamin "A."

We are still puzzled as to why leg weakness should occur on one farm and not on another when the feeding is in every respect similar.

BLOOD MEAL v. FISH MEAL.

A correspondent asks me as to the comparative value of fish and blood meal.

If we were to take digestibility as a test, blood meal would win by several lengths. Tests have shown that fowls digest 75.96 per cent. of the dry matter of blood, and of fish meal only 54.23 per cent. We are thus compelled to conclude that 46 per cent. of fish meal is passed through the system to form a heap of droppings, which would seem rather expensive if we used 20 per cent. fish meal in the mash at 24s. cwt.; but here is the point. Our experience with fish meal has taught us that it is of more value than blood meal because of the lime phosphates in which the blood is deficient.

The real factor under these considerations is not the digestible value, to which my correspondent draws attention, but the value of the protein, the mineral content and the actual quality of the food itself. One might, of course, use blood meal and compensate for the lime phosphates which are lacking by the addition of the salt mixture, so often advocated in these columns, and the very high albuminoid content of blood meal renders it quite unnecessary to use such a high percentage as is the case with fish meal.

A few weeks ago Mr. Rendel wrote us of his experiment in allowing his birds a free choice of food. I wanted then to refer to a previous experiment which had been carried out on these lines, but was unable to find the reference.

This occurred in Australia, and I believe the test is not yet complete. Three pens of White Leghorn pullets, containing 36 birds each, were concerned. None were chosen from single matings, the object being only to test birds of the quality which may be found on an ordinary farm flock. The birds were housed and treated in the same way, except for the food given.

No. 1, the "Free Choice Pen," had all the foods in different hoppers always available, and a basket filled with green stuff always before them.

No. 2 had a dry mash, consisting of 221 lbs. bran, 379 lbs. pollard, 72¾ lbs. meat meal, and 18 lbs. rape seed meal. Chaff was fed at midday and grain in the litter at night.

No. 3 had a wet mash, consisting of 228 lbs. bran, 385½ lbs. pollard, 118 lbs. meat meal, and green stuff and grain, as in Pen 2.

The "Free Choice Pen" ate 371½ lbs. of meals, in the form of bran, pollard, open pollard, barley pollard, meat meal and rape seed, and 1,450 lbs. of grain—they laid 4,309 eggs.

The Dry Mash pen ate 692½ lbs. of mash, constituted as above mentioned, and 1,190½ lbs. of grain—they laid 4,049 eggs.

The Wet Mash pen ate 732 lbs. of mash, constituted as above mentioned, and 1,098½ lbs. of grain—they laid 4,232 eggs.

One can hardly say that this test is of value under conditions prevailing in this country. One fact stands out, and that is the small percentage of animal protein consumed by the "Free Choice Pen."

They consumed the lowest quantity of wheat, and more than three times as much maize, and twice as much barley as the other two pens.

The test at this period had extended over eight months. The mashes in the wet and dry mash pens were hardly conducive to good egg production, and on this account I feel that the experiment is not one which is of much value as a guide.

OUR FRONT COVER.

Mr. R. H. Berney's Runner Ducks have earned a big reputation for themselves, and the drake shown on our front cover is a fine example of the value of a pedigree. His dam, "Lady Knight," laid 363 eggs in 365 days in the New Zealand Test, while his daughter laid 294 eggs in eleven months in a National Test, and his grand-daughters have scored numerous successes. One may fairly say that the "Duke" is prepotent. That is, he possesses, in an extraordinary degree the power of transmitting the fecundity of his dam to his progeny. One appreciates that a bird with a line of ancestors like the "Duke," is far more likely to be prepotent, and to transmit that quality to many of his decendants, because selection has been based for a long period on a specific factor.

After all that has been said and done, it is the continuous selection for this specific factor which really establishes a strain, and Mr. Berney has surely the right to speak of the "Berney strain" for his runners. One of his ducks, "Buttercup," is still in lay, having in her second year laid a sequence of 183 eggs in 183 days, and her eggs are large and fertile. The "DUKE" is an excellent type of the Runner.

Bees.

By E. W. D. MADOC.

SOME DONT'S IN BEE-KEEPING.

Don't be always inventing or buying new kinds o hives, take the advice of an experienced bee-keeper i choosing your first hive, and stick to the same kin when making further purchases.

Don't think you are going to make money out of bee if you are careless or neglect them. It is quite as eas to throw away money on bee-keeping as on anythin else.

Don't be always complaining about the poor seasons See to it that your bees give you a paying crop nin years out of ten. It can be done. It is the bad bee keeper that gets the bad seasons one after another.

Don't try to make increase too rapidly, or you wi find yourself finishing the season with no honey, an many weak stocks, with the probability of heavy losse during the winter.

Don't keep bees that are not good honey gatherers and when buying bees and queens remember that it honey you want, and the facts that certain bees ar golden in colour, or exceedingly prolific, or very quie to handle, are not going to fill your honey jars; try few queens from several different breeders, and watc the performance of their stocks to enable you to pic out the best.

Don't try and winter stocks on insufficient store Neglecting this has done more harm to bee-keepin than any other one thing. Not only should there b sufficient stores for the winter, but the large amour necessary for rearing the early hatches of brood in th spring before nectar can be gathered from outsid sources by the bees. The twenty or thirty pound generally recommended are not enough. Forty or fift are necessary if early spring brood rearing is to go o unchecked, which is so essential to enable the colon to build up to its full strength before the honey flow.

Don't use starters of comb foundation in your sections or frames. It is false economy. Bees consum as much as ten pounds of honey in making one pound wax, and full sheets of foundation not only effect big saving in this direction, but the bees will wor much more readily, and good straight-worker comb are secured free from large batches of drone comb.

Don't allow quantities of drone comb in your hives The very presence of the combs encourages swarming and they take up room, which might be more profitabl occupied, and, of course, a large amount of honey wasted in feeding the drone grubs and the adult drone when they emerge. When hatched the drones are quit useless, as far as honey gathering is concerned, and ar merely in the way.

Any drone comb present in your frames should be cu out with a sharp knife, and replaced with a piece worker comb or comb foundation cut to fit.

Votes on Utility Ducks.

By **A. HAROLD PAINE.**

w that the Spring has come duck hatching is be- ng in earnest. I know that some breeders like to heir ducklings out much earlier in the year, but s they are required for early table purposes, my ience, extending over several years, during which I have hatched out many thousands of youngsters, at from now to the end of June is the most satis- ry period for hatching and rearing. One does not uch good fertility from duck eggs in the winter, vith the approach of the warmer weather condi- improve rapidly.

ere is no doubt that the laying duck as a general osition is better than the hen. I write this dis- estedly, as when I started duck keeping with four s I had about the same number of hens, and when d five hundred breeding ducks I also had about ame number of hens, and to-day I keep them in equal numbers. Ducks require less attention, expensive housing—very often none at all—are less cular what they eat and do not suffer from roup, many other complaints, to which hens are liable. lings are not subject to B.W.D., nor does one ever of toe pecking amongst them. They require heat e brooder only for a very short period, in good her about a fortnight is sufficient. They mature ly, and after the earlier stages give very little le.

om figures received from all parts of the kingdom nk I might say, without fear of contradiction, that erage of 25-50 eggs per duck per year may be con- tly anticipated in excess of the number laid by the ge hen. Averages of 250 eggs per bird in twelve hs are common, and an average of 300 eggs per by no means exceptional. Ducks may be kept in mallest of backyards in cities, or allowed a free over any amount of land, either condition giving results so far as egg production is concerned.

e life of the breeding pens, barring accidents, is a long one, and once a selection of good birds has made there need be no replacement for three, four even five years, whilst the drake may be used for ears with safety.

oice can be made from several breeds and ties. For the heavy breeds, Khaki-Campbells, ot Rangers, Coaley Fawns, Buff Orpingtons, or ies, and for the light breeds Fawn and White, e, Fawn, or Black Indian Runners, and this order eeds is about that of the laying value, I think, ugh in one case I have heard that of several breeds by a lady in Ireland Black Indian Runners pro- l the largest number of eggs. I consider this r exceptional, as my own experience is that the I.R., whilst very striking in appearance, cannot rticularly recommended for utility purposes. Of eavy breeds, the drakes reach a weight of 4½-5lbs. tween 10-12 weeks old, and there is a good nd for these privately, and from hotels, etc. There doubt that duck eggs are in much greater demand formerly, and this is very largely due to the excellent propaganda carried on by the Utility Duck Club, which everyone who has the slightest interest in ducks should join. The minimum annual subscription is 5s., although in view of the heavy expenses of the club, a larger contribution is welcomed. The Secretary, Mr. H. B. Carrington, Blacklands, Crowhurst, Sussex, who from time to time contributes such excellent and informative articles on Duck Culture to this paper will be pleased to send full particulars on application.

In succeeding articles I hope to deal with every phrase of duck keeping.

POST-MORTEMS.

F. J. J. The post-mortem examination of the W. Wyandotte hen showed the cause to be phosphorous poisoning, no doubt the result of eating some of the rat bait.

A. B. F. Very many thanks for sending the starling for post-mortem examination. It was indeed a very interesting and significant case. It was suffering from coccidiosis, the bowel in one place having been ulcerated and perforated. By adhesive inflammation the perforation had become closed, but the bowels were all matted together. Samples of the intestinal contents, taken at intervals throughout its length, showed the presence of great number of the coccidia when examined microscopically. I should advise the thorough disinfection of the floor of the house that this bird visited, and, of course, the burning of the litter. As a precautionary measure, put all the chicks in the house on catechu water, one dram of the powdered drug to every three gallons of drinking water. The danger of wild birds disseminating this disease, is, in my opinion, a very real one, and in all probability accounts for many mysterious outbreaks.

A. W. C. The post-mortem examination of the chicks showed the cause to be per-acute Coccidiosis, so acute that beyond an inflammatory condition of the intestines, nothing diagnostic could be seen, but suspicions were justified by the microscopical examination of the bowel contents, which were swarming with the causal organisms. It was wise to isolate and disinfect, but special attention should be paid to the disinfection of the floors, and in the keeping of food and water free from contamination by the droppings. Alternate the iron and quinine with catechu water, one dram to three gallons, giving each every other day. Change and burn litter daily and disinfect twice weekly at least.

E. N. The post-mortem examination of the chicks failed to discover any lesions of actual disease, neither could the coccidial organisms be found upon microscopical examination. The digestive organs were, however, soft and flabby, the gall bladders full to bursting, and the intestines contained undigested food. These conditions are associated with too forcing a diet for birds of this age, and I should recommend deleting the egg from the ration, and making sure that the chick feed is properly balanced. Give plenty of green food, cabbage for preference, and for a day or so put two grains per head of Epsom salts in the drinking water.

The Business Side of Poultry Farming.

By JOHN H. DOWDEN.

A Lecture delivered to the Members of the South Essex Poultry Society at Wickford.

Although it was somewhat difficult to get away from my farm at this busy season of the year, I nevertheless always welcome the opportunity of an exchange of ideas, such as I trust this meeting will afford, as I find that in this way many little points are often brought up for discussion, and remedies are thus found for all those small, but none the less important, difficulties which seldom find their way into print. From this you will gather that I am looking forward to an open discussion, from which I trust we may all learn something to our mutual advantage, after I have come to the end of my notes.

It has occurred to me that a slight resume of my own personal experiences might prove the best introduction to my remarks.

To begin with, when I started, many years ago, I had no knowledge whatever of poultry farming, and possessed quite a small balance at the bank; such a sum indeed as would seem quite inadequate to most people, but thanks to a very sound business training in London, I was perhaps better equipped than would appear at first sight.

My initial venture was in the table bird branch of the industry. This, the most neglected of all branches, is one that I would strongly recommend to the beginner, requiring, as it does, far less capital than any other branch, and showing a return in the shortest possible time.

I commenced by purchasing young birds reared by others in the district, also importing from Ireland and Norfolk. I quickly found that I was paying profits to others for rearing, so the next step was to build up a flock of my own. Having accomplished this, the commercial egg claimed my attention, and sitting eggs followed, after I had established my flocks by trap-nesting large numbers. After a few years of hard work my flocks had increased to 5,500 head, and my rearing last year reached 11,000. I still consider that poultry farming is one of the pleasantest and most profitable of occupations.

I give these details in order to show that the true road to success lies in developing gradually on the lines that one's own observation and experience teach. It will be noticed that I am advocating a triple-purpose farm, whereby each season of the year can be made profitable.

It is perhaps needless to add that at the start every pound of scanty capital had to yield one full twenty shillings worth and more of value, and it must occur to you that this was not carried through without applying the strictest business methods in the process. There is no Royal Road; no short cut or secret method of obtaining success that
can communicate to you to-night, but I hope
mention many points which will interest, and
hope help to stimulate you.

I hold out no hope for those who look upon t
hen as a gilt-edged security. She does not "pay
Rather she "repays," and this only in proporti
to the steadily intelligent interest and daily ca
bestowed upon her. Spasmodic attention a
haphazard methods spell certain disaster.

Before all else, one must emphasise the impo
ance of the personality and capacity of the m
who "takes up" not only poultry farming, b
any business. The square peg will never fit t
round hole, and it is a pity that many seem
incapable of appreciating this fact. We are co
stantly hearing "lamentations" regarding t
state of the industry. Is this really owing to t
impossibility of earning, not merely a living, b
profits in this line? I have only to look around
to-night to be assured that there is more in
than a mere living. On the other hand, failu
constantly occur, and there must be some reas
for this.

In my opinion, the cause can be traced, in
large number of cases, to the fact that so ma
establishments have developed from hobbi
without introducing business methods. It is
sufficient to "just love the country" or to enj
"being one's own master." It is essential that t
poultry farmer should regard his enterprise as
business proposition, and he must be ready to gi
it at least as much time and attention as he wou
bestow on any other business undertaking. Ma
instances have been known of men with a sm
capital, who expected to live with a maximum
comfort and a minimum of work, even during t
first year, whereas they should be prepared
work extremely hard, and to put back all t
revenue they possibly can into the development
the farm if they wish to succeed.

What are business methods? Could anyone
my audience, if suddenly called upon, give a lu
and satisfactory explanation? Like many oth
attributes of the human mind, business ability
a most elusive quality, and one which it is w
nigh impossible to define. Might I be permitt
just to indicate a few of the questions which
might put to you in this connection?

Do you check your deliveries and invoices?
you obtain alternative quotations? Do you ke
a separate Banking Account and Cash Book
your business? Do you bank all remittances a
pay everything by cheque? Do you employ
office system, file correspondence and duplicat
of all letters sent out? Do you really know h
you stand? These queries will apply to the offi
side. Now allow me to put a few on the practi
farming side.

How many give sufficient thought to the lay-o
of the farm at the time of purchase; the distan
from the nearest railway station, whether the la
be dry or wet, and if a good water supply

ilable? How many study the capabilities of
neighbourhood to supply good and cheap food
markets for all produce? How many take the
ortunity of inspecting other poultry farms with
iew to gathering new ideas, and installing
the labour-saving devices they may observe.
spite of all the advice given in the press in
ard to trap-nesting, how many install this on
r farms?

am afraid that my role of examiner will weary
somewhat, but it was undertaken by me with
iew to showing how many aspects of the busi-
s side of our industry are overlooked by the
e majority of novices, and even comparatively
stagers. None of us are infallible, not even
youngest and least experienced.

nother most important qualification for the
ltry farmer is the ability to discriminate be-
en the essential and the unessential. So many
ple have a tendency to lay undue stress
n some comparatively trivial point, while they
lect the matters of real importance. It is
essary that the poultry farmer should con-
trate on those factors that are essential to the
that he has in view, eliminating everything
t is superfluous. In some cases there is no
v at all. When the position engenders failure,
must "hitch our waggon to a star," or in
ers words have plans and ambitions for the
ire, when, supposing we do not attain to all, we
e progressed owing to our aims being high.
ng back to the "unessential." I will illustrate
it I mean. A case recently came to my notice
re two partners on a poultry farm allowed the
ecessarily elaborate office system to almost
pletely monopolise their time. They had a
utifully appointed and heated office, the walls
which were covered with diagrams and charts
conscientiously numbered and coloured. Ex-
ding from this was a very elaborate system of
king which was calculated to show exactly
re any particular batch of birds should be.
en, however, the time came for stocktaking it
found that there were literally hundreds of
s short, and it was found that these had con-
ted disease and had been crawling away to the
gerows and dying off for some time past.

o matter how small your business may at pre-
t be, it is advisable to install such an office
em as will expand with a growing business,
at the same time will give reliable information
correct data whenever required, but it need
be quite a simple and inexpensive system.

etters inward should be dealt with immediately,
keted and filed with duplicate of reply, for
re reference if necessary.

ll orders given should be made out in duplicate,
the copy filed. All orders received should be
ematically dealt with in rotation.

ne would hardly think it necessary to stress the
ortance of keeping proper and necessary accounts,
how many neglect to do so?

The office system may be based on a cash book and petty cash book only; a very simple system this, but very effective, and in this connection it is well to remember that simplicity should be the keynote of all arrangements, both in the office and on the farm. A simple system works far more smoothly, and leaves fewer loopholes for error. All payments and receipts should be passed through the bank, and the cash for petty payments should not be a sum taken from the cash received, but drawn from the Bank for that specific purpose. It is most important to take stock at least once a year, and to prepare a profit and loss account, as without this it is impossible for any man to know definitely whether he is better off at the end of the year than he was at the beginning. A profit and loss account also enables him to check the various items of expenditure, and should retrenchment be necessary or desirable, to find out just in what direction it can best be effected.

The question of buying should be dealt with next, for on this depends to a great extent the success or failure of the undertaking. It has been found to be very advantageous to have a Co-operative Buying Association in any given area, as even assuming that the Association may not always be cheaper, the tendency is for competition to be so much keener in the neighbourhood that wherever you find a Co-operative Association the prices ruling in that district are very much lower than in districts where there is no such society, and, what is more important, the standard of quality will be higher. Lowness of price may not always be a criterion of value. Quality must be taken into consideration, as on the quality of the foodstuffs used will depend very largely the results obtained from your flocks. Poor foodstuffs are never cheap, and may even spell disaster, owing to their use causing disease. For this reason it behoves the poultry farmer to acquire a good all-round knowledge of foodstuffs, their properties and feeding value, and to be able to discriminate between samples of good and poor quality. His own personal experience will teach him the right proportions to mix in order to secure the best results from his own flocks. This gives rise to the question as to whether it is advisable to purchase expensive and widely-advertised foodstuffs, proprietary mashes, etc. Personally, I find that a mash composed of plain ingredients of sound quality gives me all I could wish for in the way of health and production from my flocks.

I cannot see that dried milk, for instance, at anything approaching its present price, is a food that we can afford, even for baby chicks.

Yeast is another item which I consider does not yield a fair return at to-day's price. Fish meal I have dispensed with for some time, substituting the Denton brand of meat and bone meal to advantage, both in cost and in production.

With regard to proprietary mashes, it must be borne in mind that it is impossible to mix a mash that will suit every conceivable variety and breed, kept under every conceivable condition, and in every climate. The old saw of "One man's meat being another man's poison" applies in this case, and although, of course, certain general principles can be laid down, it is only by personal observation and close study of one's own particular birds and conditions that one can arrive at the feeding formula best suited to their special requirements, and even then, certain minor adjustments from time to time will be found to be very beneficial.

In considering the development of Modern Industry in general, and in endeavouring to sum up the main factors of that development, one cannot fail to note the ever-increasing influence of co-operation. Indeed it would be superfluous to point out to the average business man of to-day how losses can be cut, profits increased, and solidarity gained, by combining instead of competing in certain spheres

Poultry farmers, however, are still singularly mistrustful of co-operation, for what reason it is difficult to see. The few scattered poultry farmers of a few years back might have been excused for their lack of co-operation. It was natural enough then for each one to concentrate exclusively on making a success of his individual job, but at the present moment there are large colonies of poultry farmers all over the British Isles still isolating themselves, and hardly looking over the fence, as it were, to view the industry as one possible organised whole, apparently unable to appreciate the enormous benefits to be derived from co-operation.

Thus we are forced to the conclusion that the typical poultry farmer has as yet failed to prove himself a sound business man in the wide sense of the term.

As a preliminary stepping stone to more serious and solid co-operation, the S.P.B.A. is ready at hand. The Council are most earnest in their endeavours to do all possible to promote this development.

Mr. Newman has shown his progressive spirit and ability in countless ways, but neither he nor the few persons most directly behind their food purchase scheme can shape an industry's course, without something much more positive than mere approval from the rank and file. It, therefore, behoves all who have the future of the industry at heart to give their support, if any solid and lasting results are to be achieved. In concluding this part of my address, I would like to point out the fact that purchasers of foodstuffs through the S.P.B.A., under the new scheme now under consideration, would have the inestimable advantage of having only foodstuffs of the very best quality, in addition to the reduction in price.

Inasmuch as buying must be carried out on business lines, so should the other side of the business, that of selling, be tackled in a businesslike manner. It is to be feared that many poultry keepers, in order to save themselves the trouble and anxiety of seeking better markets, allow their eggs and chickens to pass into the hands of the higgler, who calls at their door. The higgler merely transports the produce of the poultry keeper, but in that process acquires on many transactions a greater profit than the producer. We know that markets vary from time to time, but with patience and perseverance, the bad markets may be eliminated, with the consequence that good markets will eventually be obtained. Here again, however, co-operation is necessary to secure the best results.

There is little doubt that circumstances will play a certain part in deciding what can be produced on any one farm, but a constant endeavour should be made to enlarge the operations, so that they shall finally embrace all that it is possible to produce on a poultry farm, covering sitting eggs, day-old chicks, fatten table birds, and table eggs.

To show the necessity of combining all branches, possible, we have only to look at the present rapidl decreasing price of table eggs, to recognise how advantageous it would be to be in possession of a wel known and reputable strain, from which sittings cou be sold at three to four times table egg prices. The again, with a fattening plant, the surplus cockerel which, to the egg farmer are generally a source of los can be turned into revenue. Again, when eggs a scarce, and the employees not so fully occupied in th branch, the fattening plant is useful to fatten off a surplus stock, or possibly if heavy breeds are kept, would be in use at the time when eggs have not reache their highest price. Thus at all times throughout th year the general purpose farm would be taking advantage of each market, viz.: Eggs for sitting, table pou try, and eggs for consumption, thus making the whol round of the year profitable.

This aim may be achieved, as I have already show by developing one branch gradually from the othe until by dint of patience, observation, and attention t detail, the ideal set forth above has been arrived at.

NORTHERN UTILITY POULTRY SOCIETY'S LAYING TEST, 1924-25.

Fifth Report—21st February to 20th March, 1925.

The weather during this period has been rather more wi terly than the preceding months, snow and frost being frequen although never very severe. More than the normal hours sunshine have come our way, and, on the whole, it has been fairly pleasant time.

The health of the birds has been good, less than 2½ per cen requiring hospital treatment, and, as a consequence, the yie of eggs has been good also, rising from 259 on the first day t 424 on the 25th day. A few fresh cases are noted of moultin Broodiness is practically non-existent.

DUCK SECTION.

All these competitors are in good health, and all have mad contributions to the egg basket, but still remain disappointing this respect, not only as to numbers, but quality as well.

EGG PRODUCTION OF LEADING PENS.

Figures are Eggs and Points respectively.

Section 1. Championship (Ten Birds).—Messrs. Longworth Bro (W.L.), 648, 648; Mrs. Crooken (W.W.), 646, 646; Mrs Caming Roberts (W.L.), 593, 593.

Section 2. White Leghorns.—Wm. McMaron, 379, 379; Norma F. E. Kimberley, 339, 339; James E. Rigby, 300, 300.

Section 3. White Wyandottes.—Thomas Pinder, 381, 381; Mrs Alec Wilson, 373, 373; Robert P. Virtue, 347, 347.

Section 4. Any Other Variety (Non-Sitting).—Philip K. Berry 267, 267; Robert A. Fawsett, 235, 206; Mrs. J. H. Hill, 190, 190.

Section 5. Any Other Variety (Sitting).—Tom Gardner (R.I.R.) 400, 400; A. Sharples (R.I.R.), 353, 353; C. and A. W. Kidne (R.I.R.), 338, 338.

Section 6. Two Birds.—E. J. Stone (W.W.), 166, 166; Bolton an Gardner (W.W.), 160, 156; Sam Lord (W.W.), 129, 129.

Section 7. Single Bird.—Frank Heyworth (W.W.), 103, 103; R K. Tallis (W.W.), 92, 92; H. Percy Thubron (W.W.), 103, 87.

Section 8. Small Breeders.—E. M. Saul (W.L.), 306, 306; Mrs. J H. Early (W.W)., 336, 305; Wm. Machin (W.L.), 367, 303.

Section 9. Cross-breds.—Mrs. Clara Egar, 420, 420.

Section 10. Five Ducks.—Mr. and Mrs. Gwynne Evans (K.-C.) 297, 297; Wilson Beattie (K.-C.), 291, 291; Chivers and Sons (K.-C.) 222, 222.

Section 11. One Duck.—Oscar C. Brown (K.-C.), 82, 82; Mrs. E. M. Kirkley (W.R.), 44, 44; Arthur T. Marston (K.-C.), 40. 40.

Saltburn-by-Sea, Yorks.
11th November, 1924

"Dear Sir,—I appreciate 'Eggs' tremendously—there is something good on every page, and it is really the **only** Poultry Paper worth reading. I have found the other papers a sheer waste of time."

Yours faithfully,
(Signed) (Miss) E. ARMSTRONG.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

APPLICANTS FOR MEMBERSHIP.

kinson. J. Morgan-, Annfield P.F., Enniscorthy, Co. Wexford.
ompson, J. W., 9, Coniston Road, Blackburn, Lancs.
ey, Surgeon, Comm. S. H., "Claremont," Hayling Island, Hants.
rris. B. C., 15, Church Street, Crediton, Devon.
lby, Norman, Stonehouse Works, West Bromwich, Staffs.
re, H. H., Storklands Farm, Staplecross, E. Sussex.
Nulty, James, 19, Hill Top Road, Walkden, near Manchester.
ver, G. N., Hare and Hounds, Careless Green, Wollescote, near Stourbridge, Worcs.
milton, Mrs. V. E., Greycote, Hartley Manor Drive, Longfield, Kent.
dy, W. H., "Glan-y-Coed," Penmaenmawr, N. Wales.
nnens, Gustav, North Green Farm, Pulham St. Mary, Diss.
er, F. D., The Haven, Whitesmith, Chiddingly, Sussex.
fell, A., Elmstead, Rectory Road, Pitsea, Essex.
ghes, W., Purton, Berkeley, Glos.
rgan, Mrs. Phillips-, The Old House, Bushley, Tewkesbury, Glos.
lin, John, Frocester, Stonehouse, Glos.
nson, Miss, Ripple Hall, Tewkesbury, Glos.
rmington, W. H., Overbury Fruit and P.F., Overbury, Tewkesbury.
er, H., 12, High Street, Tewkesbury, Glos.
tham, A. E., Senior Council School, Tewkesbury, Glos.
ly, E. G., Cliff House, Leckhampton, Cheltenham.
e, C. W., Manor Farm, Terrington St. Clement, King's Lynn.
odgett, Richard L., Sneating Hall, Kirby-le-Soken, Clacton-on-Sea, Essex.
l, Miss E. D., Delydene, Halliford Road, Sunbury-on-Thames.
l, Sidney, Langford House, Langford, near Bristol.

FOOD PURCHASE SCHEME.

Miss E. Gibson, of Cathay, Finchfield Road, Finch- d, Wolverhampton, would be glad if any members the vicinity of Wolverhampton will help to form a up for the purchase of foods.

POST-MORTEMS—Continued.

C. A. The post-mortem examination of the sit- g hen showed the cause to be infectious leukaemia, lood disease characterised by an increase of the ite blood corpuscles, with a corresponding decrease the red cells. The condition produced is one of ense anaemia. The cause is an ultra-microscopic us, which passes through a bacterial filter, but ether it is an animal or vegetable organism is not own. Treatment, which is not any too effectual, con- s of tonics. sulphate of iron and gentian root in the sh, or citrate of iron and quinine in the drinking er, one dram to the gallon. The litter should be red up and burned, and the coops and ground roughly disinfected with strong disinfectants, such quarter of a pound chlorinated lime to one gallon vater.

V. H. B. The only lesions to be discovered in these ks were those of acute gastritis, such as would be luced by some irritant substance or food. The small e of the quinine and iron that you are giving would be responsible for this, and I should advise you examine the foodstuffs most carefully for anything n irritating nature, or signs of spoiling.

THE UTILITY DUCK CLUB AND THE NATIONAL UTILITY POULTRY SOCIETY.

NATIONAL DUCK EGG-LAYING TEST, 1924-25. Held at Bentley, Suffolk.

Report for Fifth Period—25th February to 25th March, 1925.

Egg production during the month, as is usual at this time of year, was very satisfactory, average of 22.44 for 278 ducks. In Buff Orpington section the average was just 27 eggs per duck.

Eighty-nine ducks laid 28 eggs in the 28 days, and in four pens all three ducks laid 28 eggs each, viz.:—Mr. A. H. Hawke's K.C.'s, Mr. A. Striplin's K.-C.'s, Mr. W. R. P. Symonds' K.-C.'s, and Lady Edith O'Shee's F. and W.R.'s.

In the Championship Section a number of ducks which have laid well since October, are now doing a partial moult, but they usually come on to lay again very quickly at this season.

Miss E. Cavanagh (Dublin) F. and W.R.'s now lead in Championship Section. Mr. H. S. Godsmark (Sussex) three White Runners have still highest average per head in whole test, i.e., 100 eggs in 20 weeks.

Eggs of good size, shape, and texture. Only those scoring 2¼ozs. are now counted.

Health of flock excellent with one exception, which is suffering from ovarian trouble.

EGG PRODUCTION OF LEADING PENS.

Figures are Eggs and Points respectively.

Section 1. Championship (Five Ducks).—Miss E. Cavanagh (F. and W.R.), 440, 440; Chivers and Sons (K.-C.), 446, 430; Capt. R. A. Long (K.-C.), 397, 397; H. B. Carrington (K.-C.), 406, 391.

Section 2. Khaki-Campbells (Three Ducks).—A. N. Dickson, 263, 263; Maunder and Colson, 249, 249; Miss Harrison Bell, 250, 248; Oscar C. Brown, 246, 244.

Section 3. Indian Runners (Three Ducks).—A. H. Fox-Brockbank (F. and W.R.), 202, 202; Ben Clark (F. and W.R.), 194, 194; Mrs. G. Streatfield (F. and W.R.), 193, 193; H. B. Carrington (F. and W.R.), 193, 193; H. S. Godsmark (W.R.), 300, 300; E. and T. Bullmore (W.R.), 215, 215; R. A. and A. M. Johnson (W.R.), 212, 212.

Section 4. Buff Orpingtons (Three Ducks).—Lucas and Power. 170, 169; A. F. M. Stevenson, 143, 143.

Section 5. Any Other Breed (Three Ducks).—F. Gardner, 228, 228; Dr. T. Henneppe, 215, 215; Mrs. E. Van Bergen, 170, 170.

PERFORMANCES OF PULLETS ENTERED FOR THE INDIAN U.P.P.A. EGG-LAYING TEST, 1924-25.

Warwick Rogers, England (W.L 1), 59 pts.; (W.L. 2), 57; (W.W. 3), 45.2; (W.W. 4), 59.8

F. R. Welch, England (L.S. 5), 38.3; (L.S. 6), 54.8; (L.S. 7), 46.4; (L.S. 8), 44

Lord Dewar, England (W.L. 10), 38.2; (W.L. 11), 46.8; (W.L. 12), 15.8; (W.L. 13), 35.8.

Walter Bradbury, England (W.L. 14), 30 6; (W.L. 15), 61.6; (L.S. 17), 45.6; (L.S. 18), 47.

L. A. Ellis, Australia (W.L. 19), 58.8; (W.L. 20), 59.6; (W.L. 21), 58.4

Raja Bahadur, Mursan, U.P. (W.W. 23), 48.6; (W.W. 24), 48.2; (R.I.R. 25), 42.4; (R.I.R. 26), 32.4

U.P. Poultry Association, Lucknow U.P. (R.I.R. 27), 53.2; (B.L 28), 41.6; (Aus. 29), 51; (W.W. 30), 58.4.

Miss Stehelin, Dehra Dun. U.P. (L.S. 31), 27; (R.I.R. 32), 31; (L.S. 33), 38.6.

M. M. Kahn, Lucknow U.P. (W L. 36), 49.4; (W.L. 37), 52; (W.L. 38), 49.4; (W.L. 39), 44.8.

Mrs. Grain, Ranikhet U.P. (Aus. 40), 62.2; (Aus. 41), 63; (Aus. 42), 57.2; (Aus 43), 26.8.

R. W. Zeakins, Dehra Dun U.P. (W.L. 47), 52.4.

G. Duncan Terry, Simla (W.L. 48), 46.4; (W.L. 49), 36.2.

Capt. Mayo, Nahan, Punjab (W.L 50), 53.2; (W.L. 51), 49.6; (W.L. 53), 59.6.

C. Lawrie, Jhansi U.P. (W.L. 54), 47; (W.L. 56), 43; (W.L. 57), 54.

F. J Mackenzie, Ghorasahan, Behar (Aus. 58), 46.6; (Aus. 59), 33.4.

Mrs. Lambert, Ranikhet U.P. (B.C. 62), 45.6; (B.M. 63), 37.

Mrs. Cardew, Lansdown U.P. (W.O. 64), 46.8.

We regret by an oversight that Mr. Warwick Rogers' name was wrongly given in our report as winning the Overseas Cup. Mr. Walter Bradbury is the winner with his White Leghorn No. 15.

(Signed) A. K. FAWKES.

"Ashmead," Garstang, near Preston.

Dear Sir,—I would like to add my appreciation of your efforts in making "Eggs" so useful and interesting to poultry-keepers. I look forward each week to receiving my copy, and am always sure to find something new and helpful to me. I have long ago ceased to take other poultry papers, as I find that the help one gets from "Eggs" is far more reliable. I wish you, "Eggs" and the S.P.B.A., a very prosperous New Year.

Yours sincerely,
(Signed) W. R. LORD.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING THURSDAY, APRIL 9th, 1925.

GRAIN AND FEEDING STUFFS.—English wheat continues to meet a quiet trade and is again cheaper at all markets, the average quotations having fallen to 12s. 1d. per cwt. as against 12s. 5d. in the previous week. The market for imported wheat has been very irregular, and little business has been transacted. Average prices over the week again record a sharp fall, and at Hull and Bristol No. 1 Manitoba is quoted at 1s. 6d. per cwt. less on the week. Trade for barley is slow, and, although at Hull recent prices are maintained, at other centres values have declined. Home-grown oats are in quiet demand but sell at recent prices, while imported generally realise less money. Maize meets a dull trade at slightly easier prices.

Millers' offals are generally in quiet demand, and bran at Bristol and Liverpool is 12s. 6d. and 5s. per ton respectively cheaper than a week ago, while coarse middlings at the same towns are reduced 5s. per ton. At London, however, both bran and coarse middlings are somewhat dearer on the week. Meals mostly meet a slow trade, and maize meal has a cheaper tendency. Oil cakes record little change in value, but quotations for linseed cake at London and Liverpool favour buyers.

MILLERS' OFFALS.—Bran (British): Bristol, £7 15s; Hull, £7 12s; Liverpool, £8; London, £7 2s. Broad Bran: Hull, £9 7s; London, £8 15s. Middlings—Fine (Imported): London, £9; Coarse (British): Bristol, £8 10s; Hull, £8 5s; Liverpool, £8; London, £8 2s. Pollards (Imported): Bristol, £6 15s; Hull, £6 15s; London, £7 2s. Rice Bran: Liverpool, £8. MEAL.—Barley Meal: Bristol, £11 10s; Hull, £11 10s; London, £11 10s. Maize Meal: Bristol, £10 17s; Hull, £10 15s; Liverpool, £10 2s; London, £10 10s. Maize Meal (S. African): Bristol, £10 5s; Hull, £9 15s; Liverpool, £9 7s. Maize Germ Meal: Bristol, £10 10s; Hull, £10 5s; London, £9 5s. Maize Gluten Feed: London, £10 5s. Locust Bean Meal: Bristol, £9 10s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 13s. London, £13. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £19; London, £20 10s.

EGGS AND DEAD POULTRY.

Heavy quantities of British eggs are marketed, but lighter offerings are available from foreign and colonial sources. A somewhat better inquiry has been experienced, and recent quotations are fully maintained for practically all descriptions.

Week-end Prices—Eggs (per 120): British, 13s 3d, 12s 3d; Irish, 13s 0d, 12s 6d. Danish, 14s 9d, 14s 3d; Dutch, 14s 9d, 14s 0d; Egyptian, 9s 6d, 9s 3d; Styrian, 12s 0d, 11s 6d; Belgian, 13s 6d, 13s 0d. Polish, 11s 6d, 11s 0d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 3d, 1s 9d; Irish, 1s 9d, 1s 2d; Others, 1s 10d, 1s 5d. Ducks, 2s 0d, 1s 4d. Geese, 1s 3d.

EGGS.

Per Doz.—Ashford: First, 1s 4d; Second, 1s 2d. Birmingham: First, 1s 4½d; Second, 1s 3½d. Chelmsford: First, 1s 5½d; Second, 1s 3½d. Doncaster: First, 1s 4d. Exeter: First, 1s 2d. Hereford: First, 1s 2d. King's Lynn: First, 1s 2d; Second, 11d. Llandilo: First, 1s 0d. Montgomery: First, 1s 0d. Newport (Mon.): First, 1s 3d; Second, 1s 2d. Norwich: First, 1s 1d. Penzance: First, 1s 1d: Second, 1s 0d. St. Ives (Hunts): First, 1s 2½d: Second, 1s 1½d. Salisbury: First, 1s 2d; Second, 1s 1d. Skipton: First, 1s 2d. *Carlisle: First, 1s 3d. *Derby: First, 1s 3d. *Ipswich: First, 1s 3d. *Lincoln: First, 1s 3d. *Shrewsbury: First, 1s 3d; Second, 1s 2d. *York: First, 1s 5d; Second, 1s 4d.

FOWLS.

Per lb.—Birmingham: First, 1s 6d; Second, 10d. Doncaster: First, †5s 0d; Second, †4s 6d. Exeter: First, 1s 9d. Hereford: First, 1s 8d. Llandilo: First, 2s 1d; Second, 1s 8d. Newport (Mon.): First, 1s 7d: Second, 1s 3d. *Derby: First, †5s 9d; Second, †4s 0d. *Ipswich: First, 1s 9d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 1s 4d. *York: First, †5s 6d; Second, †4s 6d.

DUCKS.

Per lb.—Exeter: First, 1s 6d. Llandilo: First, 2s 1d: Second, 1s 8d. *Ipswich: First, 1s 7d.

*At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. †Per head.

" Eggs."

The Official Organ of the Scientific Poultry Breeders' Association

Wednesday, April 15th 1925.

CONTENTS.

EDITORIAL ... ...
BRIGHTON STOCK TEST ... ...
UTILITY DUCK CLUB NOTES ... ...
WYE COLLEGE DUCK LAYING TEST ... ...
ANSWERS TO QUERIES ... ...
S.P.B.A. ... ...245 and
MODERN POULTRY FEEDING ... ...
BEES ... ...
NOTES ON UTILITY DUCKS ... ...
POST-MORTEMS ... ... 249 and
THE BUSINESS SIDE OF POULTRY FARMING ...
NORTHERN UTILITY P.S. LAYING TEST ... ...
UTILITY DUCK CLUB AND POULTRY SOCIETY'S TEST ... ...
INDIAN EGG-LAYING TEST ... ...
MARKET REPORT ... ...

Contributions.—The Editor will always be pleased to consi contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence " Eggs " to their poultry-keeping friends.

Subscriptions to " EGGS," 12s. 8d. per annum; 6s. 4d. for months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beec Rudgwick, Sussex.

All communications with regard to Advertisements should addressed to Mr. S. H. Burles, " Eggs," 94, Farncombe Str London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first p of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation " Eggs," it is imperative that new advertisemen and alterations are received by FIRST POST O FRIDAY MORNING to ensure insertion in t following Wednesday's issue. It is hardly nece sary to add that the earlier in the week we recei copy the better it is for everyone concerned.

PROOFS.

We cannot guarantee to submit proofs unless co plete copy is to hand by FIRST POST ON TH MONDAY PREVIOUS TO THE FOLLOWIN WEDNESDAY WEEK'S ISSUE.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, APRIL 22nd, 1925.

Scientific Poultry Breeders' Association.

ıll particulars of membership will be sent by return on plication to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

EGG PRICES.

'hile in Guildford last week I saw eggs in ly all the shops marked at 1s. 9d. per dozen, l, while in a town not far away they were g sold at 1s. 2d. The highest price quoted e Ministry of Agriculture returns was 1s 5½d. Chelmsford for first grade eggs. At King's they were 1s. 2d, Norwich 1s. 1d., Exeter, ford, Salisbury and Skipton 1s. 2d. The re-'s profit is far too large, and it hits the pro-r because it curtails the demand. There is eason why English new-laid eggs should not tailed at 1s. 6d. per dozen, when prices paid e producer are so low. I notice this week that grades of Danish and Dutch eggs are quoted s. 9d. as against 13s. 3d. for best British, the second grade are 14s. 3d. as against 2s. 3d. I saw Danish **new-laid** eggs retailed ree for fourpence. Truly we have something arn on the subject of marketing.

IPORTANT—B.W.D. AND THE BLOOD AGGLUTINATION TEST.

the March meeting of the Council a letter ead from a member, proposing that all regis-pens should be blood tested, and that no pen ds should be registered unless a certificate sent that the birds in the pen were blood l. The Council were of opinion that they o power to enforce this, as it would involve eration in the rules, and it must come before eneral meeting. At last week's meeting of ouncil a suggestion was made to the effect instead of it being compulsory, it should be ary, and if members' breeding stock was tested, and they wished to state that fact registering a pen, facilities should be given for doing so. I am instructed to "feel the phere"—that is to say, we want to know as possible whether members favour com-y blood testing of registered pens, or, should it be voluntary, and facilities given to those with tested stock, to record the fact that it is tested. Perhaps it would be wise if I were to add that competent authorities assure me that the test is wholly reliable—that is, a "carrier" hen will re-act, but when the test is negative it does not follow that it would be negative a month hence, and the test should be made at least every six months.

REGISTRATION AND THE EARLY-HATCHED PULLET.

This matter came before the Council at the last meeting. It has always been a sore point that the early-hatched pullet, although she may be in every respect the equal of her later-hatched sister as a breeder, cannot be registered because she generally falls into a moult and lays no eggs when the time comes for them to be recorded. The Council has been asked to make provision in the register for these early-hatched birds—in effect, **it is asked to find the equivalent of the winter record,** and again I am instructed to get members' opinions. The Council favour the suggestion that these early-hatched pullets should be registered, and it is hoped that we may be able to make provision for them in the next Register, but we want members' opinions particularly in regard to what will be equivalent to the winter record.

ALTITUDE AND INCUBATION.

I have a letter from Messrs. Thomson, of Holywell, on this subject, in which they say:—

> "Previous to this year we resided about 400 feet above sea level, and our incubator results were quite normal, hatching taking place as expected on the 21st day. Last autumn we removed to our present holding, situated on the N. Wales coast, about 800 feet above sea level, and this season our hatches have all taken a day or two days beyond the usual three weeks. Our experience has been too short for us to arrive at any definite conclusions as to the effect, if any, that altitude has on incubation, but our results would seem to point in the same direction as your correspondent's of April 1st. It would be helpful if others situated 700 feet above sea level would give their experience with hatching. Like your correspondent, we see no bad effect on the development of the young stock—rather the contrary."

Now we have a letter from Mr. Green, of Ormskirk, who writes :—

> "My altitude is nearly sea level, and the last two hatches took 22 days—in fact, I think some more would have come out, only I thought taking so long to hatch they would be weakly chicks."

The delay in hatching may have arisen from different causes in these two cases, perhaps some more of our members will send along their experience. I can hardly think it is solely a question of altitude.

TOE-PICKING.

Already one or two complaints of toe-picking have been received, and if we get a spell of bright weather it is quite possible that several bad outbreaks may occur, which may later develop into cannibalism if unchecked. We know it to be only a vicious habit, caused by the penchant of the chick to peck at anything bright, that it rarely occurs in any but the yellow leg breeds, and is most prevalent in bright sunny springs, because the sunlight plays on the yellow legs, the chicks peck them, presently blood is drawn, and the fun begins. It is very difficult to check when once started. The best method of prevention is to blue-wash the glass in the brooder houses, and to litter the floor with clean wheat straw chaff. The addition of sulphate of iron to the drinking water will also do something towards checking it. Only those who have experienced an outbreak with a large flock have the remotest notion of what mischief it can cause. In 90 cases out of 100 it is not, as so often stated, due to dietetic deficiencies. I have rarely found changes in the diet to have the least effect in checking the trouble.

A PLEASANT TASK

Awaited me on my return from Edinburgh, where I had been on special business last week. Fourteen lots of eggs which had refused to hatch were ready for me. They arrived by post and they arrived by train, and I want, if you don't mind, to give you a little idea of some of them, and how different the point of view may be. No. 1 was two eggs carefully wrapped in cotton wool, in a golden syrup tin. They arrived safely, and from these two eggs, one of which was clear and the other addled, I was supposed to be able to indicate to the sender why a 240 Glevum incubator failed to hatch more than 50 per cent. No. 2—This was a one pound butter box, made of cardboard, came per post ; it was almost as flat as a pancake, and oozing from it was mashed chicks, egg yolk, blood, etc., etc., with a letter soaked with this mess on the top. No. 3—ONE dozen eggs in a cake tin, mostly broken, loosely packed, wrapped (each egg) in a single thickness of butter paper ; on the top a card—"One dozen eggs from G.M." Nothing more. The next was a huge parcel. I think it was a ladies' hat box, filled to the brim with bran. After searching for some time we came to the eggs, all thickly wrapped in newspa half a dozen of them in all, and then we foun letter, some eight pages, giving the whole hist of the stock, describing the incubator room, incubator, method of running, etc., etc. V complete, but hardly concise details. No. 4 s 50 eggs, packed in hay in a soap box. Th arrived safely, with a letter stating that they been bought as Barnevelder eggs from a bree near London. They were possibly Barnevel eggs, but they were not hatchable, and, in opinion, they were what is known to the trade "Dutch All Brown." No details were given as to the incubator or methods employed. I inadvisable to buy Barnevelder or any other e from a breeder near London, who advertises different varieties, and several cross-breeds, e when they are advertised as "Gold medal stra you will find his "breeding pens" either in cellar or in the gutter in front of his shop. 5—One dozen eggs, in a patent hammock b note enclosed : "Capt. ——— requests infor tion as to why these eggs did not hatch. He be obliged if the box is returned as soon possible." No further information and ninepe to pay for the return of the box. Having exami some 250 eggs in all sorts and conditions of b and messes, and letters stuck together with yolk and something else, one goes in to su and finds an omelette, and realises very sudd that there is much truth in the statement that can't make an omelette without breaking eggs

Now this is not "writ sarkastick ;" at lea am not feeling that way. I only want to rem those who send unhatched eggs for examina that they are just as breakable as any other and for that reason should be as carefully pa and sent **by rail.** Further, it us useless to less than a dozen, and unnecessary to send That a few concise details, such as a descrip of the breeding pen, limited to the breed, number in pen, the kind of incubator, ave temperature of incubator room, method of run machine, particularly as to temperature and m ture, will all be helpful. The whole of the ne sarv information can be written on a post-c and it helps you and it helps me.

COUNCIL MEETING.

The monthly meeting of the Council was at the Memorial Hall, Farringdon Street, W nesday, April 8th. The President (Mrs. Hur was in the chair.

Present : Miss Maddison, Mr. J. G. Kitson, J. Smart, Mr. J. H. Dowden, Mr. P. Hedw Foulkes, Mr. Fletcher Hearnshaw, Mr. L Spurgeon, Mr. Bostock Smith, the Treasurer Secretary.

MINUTES.—The Minutes of the last me were read, confirmed, and signed.

BLOOD AGGLUTINATION TEST.—Arising of the minutes, the Secretary said that a letter been received, suggesting that if it was not

to make compulsory the blood testing of
tered pens, that it should be voluntary, and
ial facilities should be given those who wished
egister their pens as blood tested. The
ctions to the proposal were discussed, and
ght not to be insuperable. The Secretary was
ucted to ventilate the subject in "Eggs"
a view to getting members' opinions.

CRETARY'S REPORT.—The Secretary re-
d that he had visited Norwich, Birmingham,
Ottery St. Mary, and lectured to large
nces. One hundred and twelve new members
been elected during March. The Wellingham
riments were quite satisfactory, and a report
l shortly be published.

OD PURCHASE SCHEME.—The Secretary
ted that greater interest was being taken in
cheme, and several orders had been executed.
s a little disappointing to find that those who
nost reason to expect to benefit by it—he re-
l to those who were not in a position to
n large quantities—had not taken advantage
One good effect had been, that many mem-
had taken the price lists to their millers and
merchants and succeeded in making them
their prices down to the S.P.B.A. level.
were making arrangements with millers and
merchants in all parts of the country, and
e S.P.B.A. mashes were now available at
ow prices, the quality of the ingredients they
guarantee.

ERNATIONAL FEDERATION OF POULTRY
CTIES.—The Secretary read a letter from
elson, enclosing particulars of the above
ation, and asking that a representative
attend the next meeting. The question
iscussed, and it was agreed that the Pre-
should attend the next meeting.

surer's Report was submitted, declared
ctory and adopted.

LY HATCHED PULLETS AND REGISTRA-
—The Secretary reported that letters had
ceived urging that provision should be made
e registration of early hatched pullets.
rs complained that these pullets made ex-
breeding stock, and they were unable to
r them if they used them for breeding,
gh they were in every respect equal to those
were registered. The difficulty was to know
ecords were equivalent to the winter re-
The Council recognised that provision
be made in the register for these pullets,
was agreed that the Secretary should collect
essary data and report to the next meeting.
s agreed that a telephone should be in-
in the office at Rudgwick.

date of the next meeting was fixed for
day, May 6th.

The Willows, Haydock.

r,—I take "Eggs" weekly from my local newsagent,
the six papers I take it is the only one I can take and
beginning to end.

Yours sincerely,

(Signed) **A. PIMBLETT.**

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

R. D. (Hemel Hempstead) writes to ask if I can tell him why his chicks' wings develop too early. The wings seem to grow faster than the chicks' bodies. I suspect this is due to overcrowding. When it occurs it shows there is something radically wrong. The trouble may have originated during incubation, but that is hardly likely. A badly hatched chick means badly assimilated food, and generally the wings develop much more rapidly than the frame. But overcrowding is the main cause of faulty ventilation of the brooder; it may be due, too, to too high a temperature in the brooder, or to inherent disease. R. D. would be well advised to see there is no overcrowding, and it would be a great help to such chicks if two per cent cod liver oil was added to the mash.

N. C. (Skipton) writes to say that he has been told that Rhode Island Reds, with grey or light eyes, are better producers than those with red eyes. The man who told him so has had a long practical experience, and said he was in a position to prove it. Some time ago a member wrote to say that he noticed that the combs of all his best layers fell over on the right side. Years ago an American made the discovery that with his White Leghorns all the breeding cockerels had "Rocker" combs, that is the comb following the line of the neck. Your informant is not quite correct, N. C. I have no doubt that the best layers in his flock have light eyes, but that does not prove that the light eye has any connection with the laying qualities of the birds. It simply means that the best layers in his foundation stock had light eyes, and these being dominant to red, the majority of his best layers have them too. N. C. will find that pullets with red eyes will lay equally as well as those with light ones, if they are bred on right lines.

W. H. R. (Ingatestone) sends a dozen eggs which have failed to hatch, and he wants to know the reason. Only one chick had reached the 19th day, and in every way they were a bad lot of eggs—thin-shelled, small, and some of them badly shaped. It is a mistake to incubate such eggs, W. H.R. They are likely to hatch badly, and such chicks as they would produce would be small and weakly. It is the eggs which are at fault, and not the incubator. I fancy you are breeding from pullets, and that your feeding is incorrect. You should send me more details. The sample of meat and bone meal at 22s. per cwt. is dear at the price, the proportion of bone being very excessive. The sharps are fair average quality.

New Reader (Burton) has a number of Wyandotte chicks reared in a colony house with a hover. They are not doing well, and are continually sneezing. I suspect that the cause is floor draughts, and he would be wise to see if this is the case. Such conditions are sometimes due to too high a temperature in the brooder, and the over-heated chicks coming into contact with a cold atmosphere. It would be advisable to give 40 grains of citrate of iron and quinine to the gallon of drinking water. Allow them nothing else to drink, and it would help them considerably if two per cent. cod liver oil was mixed with the mash. In answer to his second question, I do not think it would be profitable to incubate Minorca Orpington eggs so late in the season. The cross is slow to mature, and the chance of winter eggs would be small. It does not show sex-linked inheritance.

Sesa (Worcester) has had a very bad hatch with a tank machine. She has sent me a dozen eggs. In ten of them the chick completely filled the shell, and the trouble in this case was undoubtedly excess of moisture. On enquiry I find that in addition to the moisture tray being filled from the first, the eggs were sprinkled, and the ventilation blocked partially for the first ten days—this on the advice of a friend. It will be better if Sesa follows makers' instructions in future, with such modifications as her experience suggests. It would seem a mistake with this machine to block the ventilation. In most of the eggs which I examine from tank machines, where they are not at fault, the indications are that there is not sufficient ventilation. In answer to her second question, her feeding is too stimulating if she is getting such a number of double-yolked and thin-shelled eggs, and it would be advisable to reduce the fish meal by one-half, and replace the maize in the grain feed with oats for the time being. If she continues to feed as she is doing now, she is likely to get cases of prolapsus.

K. D. (E. Lancs.) wishes to know whether locust meal will produce more eggs than fish meal, or any other animal protein, and whether I think it a good food. No authoritative comparative tests of the value of locust meal as compared with other animal foods have been made, K. D. I have not the slightest reason to believe that it is in any way inferior to other animal protein. It has given satisfactory results in South Africa, and if the price is right you may use it in place of other animal foods, and not have any as to the result. In answer to your second quest I cannot at the present time give you a cheaper mula than the following for laying stock:—Bran, 2 Middlings, 4lbs.; Maize Meal, 2lbs.; Soya Bean, ½ Meat Meal, ½lb. If this is used as a wet mash pound of the bran should be replaced with ano pound of middlings.

C. G. (Darlington) has a Rhode Island pullet w started in October by laying 20 eggs, and then g broody She was broken of this, then laid 13, and w broody. Cured again, she laid on 15 successive d and went broody, and has been broody twice si She lays a beautiful egg, and C. G. wishes to b from her next season, as, in spite of her broodiness, passed the S.P.B.A. winter test. He thinks if mates her to the son of a non-broody hen he will experience much trouble with the progeny. I c agree with you, C. G. Broodiness is dominant to broodiness, and my experience with such hens as y has been that they throw very broody progeny how they may be mated. A trial made in this direction a very broody Buff Orpington, mated to a Black horn cockerel, gave some of the broodiest pullets it ever been my lot to possess. I should discard suc pullet, or you will only breed trouble into your floc

---

F. T. (Hull) writes on the same subject as C. His trouble is that he has a strain of White Legho which are very broody, and he wishes to know ho non-broody breed became "infected" with broodin I think, F. T., we can trace this to some impo birds which had been out-crossed with a broody br Certain it is that we did not hear much of broodi amongst White Leghorns until after these importat took place. As to how you are to eliminate it— can only be done by discarding every bird that sh the least sign of broodiness.

M. V. L. (Warwick) bought 100 day-old chicks, lost 70 per cent. of them, and the cause of the mortality has been certified to be B.W.D. He whether he will be running any great risk if he ke the remainder, as they were expensive chicks, and wants them for breeding stock. There would be great risk, M. V. L., in breeding from such stock. is almost certain that the majority of them would carriers, and your troubles would be a hundred ti greater next season. Much better cut your loss; d breed from them on any account. The risk in keep them for egg production alone would not, however great, but those which have survived an attack of disease are not likely to produce many eggs, and would be wise to kill and burn them.

L. M. (Bridgwater) sends two samples of chick f which on examination I find to be perfectly sound. is losing a large number of chicks, and altho he is not a member of the S.P.B.A., and not enti to a reply by post, I would have written to advise had he sent me his address. From the sympt described I am almost sure that the death of chicks is due to Coccidiosis. He should act im

ely, kill and burn every chick which shows the
t sign of sickness, remove the others to fresh
ind, put the drinking vessels and drinking troughs
uch a position that they cannot be fouled as infec-
is through the excreta, and add 15 grains of
dered catechu to each gallon of drinking water,
allow the chicks nothing else to drink. There is
little hope of successful treatment, however, un-
there is the continual removal of the chicks to
h ground.

. M. (Balham) writes:—"I am trying to rear
dozen chicks, fed as follows, every two hours:—
. middlings, 3lbs. dried milk, 4ozs. Cerema Mar-
, and grain feed at night, as directed in your book,
dern Poultry Feeding.' " This refers to the Wel-
ham experiments, and more particularly, I think,
o. 4, in which the feeding was two-thirds stone-
nd middlings and one-third dried buttermilk. His
ble is that although the chicks are lively, the
pings are moist and often frothy. It is probably
to the milk, and I would advise him to reduce it.
her, the sample of middlings he sends is too
se, and the bran is not a good sample. The
llings used in the Wellingham experiment, de-
ed as "stone-ground" middlings, were almost
l to a low-grade flour, and the bran was the best
e-ground broad bran that could be procured. H. M.
ld be very careful to feed the mash in a crumbly
t condition, and be sure that it is not sloppy. We
ot reply to non-members of the S.P.B.A. through
post unless a fee of 2s. 6d. is enclosed. Only
bers are entitled to free advice by post.

POST-MORTEMS.

S. The post-mortem examination of the Black
orn hen showed that the jaundiced condition was
to fatty degeneration of the liver. The heart and
eys were also degenerated, and there was fatty
ration of all the tissues. There was also a dis-
ion of the cervical vertebrae and haemorrhage
the soft parts of the neck.

M. S. The post-mortem examination of the one-
-old White Leghorn pullet showed that a sharp
of flint (enclosed) had perforated the bowel and
ated the messenteric artery and caused internal
orrhage. There was no sign of any other trouble
poison.

FOOD PURCHASE SCHEME.

Gerald H. Cole, of Walton House, Walton,
borough, writes that he is willing to form a group
s district, if members would communicate with

. H. Taylor, of Threstle Nest Poultry Farm,
olmroyd, Yorks., also informs us that he will be
ed to form a group in his district, and we should
lad if members would communicate with these
entlemen.

Poultry Foods,

THEIR NATURE, COMPOSITION, EXAMINATION, AND ADULTERATION.

By **HAROLD T. CRANFIELD.**

Advisory Chemist to the Midland Agricultural and Dairy College. Late Official Agricultural Analyst to the Counties of Notts. and Lindsey (Lincs.). Member of the Society of Public Analysts.

The feeding of poultry has, in recent years, developed into a very intricate system, as a result of the attention given to egg production and fattening, and the economic aspect of poultry-keeping generally. To the poultry farmer feeding for egg production is as important a study as feeding for milk production is to the dairy farmer, and the cost of food in relation to eggs produced is a matter of vital importance to every individual who is endeavouring to make a living from poultry.

Poultry farmers, unlike dairy or sheep farmers, buy the bulk of their food, i.e., little or none is produced on the farm (except in those cases where poultry-keeping is carried on as an adjunct to general farming). In consequence they must pay special attention to the study of poultry foods, and, in fact, should be "au fait" with the origin, nature, composition and possible forms of adulteration of all substances sold for feeding poultry. A useful maxim would be, "Never buy a food, the origin, nature and composition of which is unknown." One does not wish to infer that new feeding stuffs should be avoided, but the would-be purchaser should make it his business to ascertain from reliable sources all that is known concerning such foods, and, if reports appear satisfactory, feed judiciously and carefully watch results.

In buying poultry foods there are many factors to be considered apart from price, and it is proposed in this article to enumerate and explain these factors:—

1. **Suitability.**—A material for feeding should be in a condition suitable for feeding, i.e., not in large lumps which require crushing, nor in a wet sloppy condition. Again, there should not be present an excessive amount of material worthless for feeding purposes, e.g., indigestible fibre, dirt, etc.

2. **Keeping Quality.**—This factor is usually influenced by the amount of moisture present. As a rule foodstuffs containing less than 14 per cent. of moisture will keep well, if stored in a dry place. If mouldiness or rancidity develops, the food deteriorates and may cause injury to stock.

3. **Injurious substances.** — Occasionally materials offered for poultry feeding contain substances of an injurious or poisonous nature. A typical example is castor meal, the residue remaining after the extraction of oil from the castor bean seed. These should be avoided at all cost.

4. **General Feeding composition.**—The three main groups of feeding constituents of foods are: (a) Albuminoids, also called proteins; (b) fats and oils; (c) carbohydrates, including starches, sugars, digestible fibre, etc. The approximate percentages of these three groups should be known in order that the suitability of the food for the type of stock it is required for can be judged. A fourth group, viz., mineral constituents, is of great importance in feeding, the significance of which has only been realised in recent years.

5. **Digestibility.**—A food should be reasonably digestible, but particular attention should be paid to this factor in the case of chicks and fattening birds.

The intelligent poultry farmer will no doubt be well informed as regards the above factors, at least for all the well-known and commonly used foods. It must not be forgotten, however, that one particular food may vary considerably, both as regards composition and purity.

Feeding value cannot well be determined outside an analytical laboratory, and the poultry farmer is perforce compelled to use average composition figures in balancing his rations. One should not forget, however, that certain foods must be sold on a guaranteed basis of oil and albuminoids, according to the provisions of the Fertilisers and Feeding Stuffs Act (1906). It is feared that many poultry-keepers are not aware of the protection afforded by this Act, and it is perhaps opportune to state briefly, in this article, the main points affecting poultry foods.

Section 1 (1) of the Act states:—

> "Every person who sells for use as food for cattle or poultry any article which has been artificially prepared, shall give to the purchaser an invoice stating the name of the article, and whether it has been prepared from one substance or seed or from more than one substance or seed, and in the case of any article artificially prepared otherwise than by being mixed, broken, ground or chopped, what are the respective percentages (if any) of oil and albuminoids contained in the article, etc."

Section 6 (1) states:—

> "If any person who sells any article for use . . . . as food for cattle or poultry commits any of the following offences, namely:—
>
> (a) Fails without reasonable excuse to give, on or before or as soon as possible after the delivery of the article, the invoice required by the Act; or
>
> (b) Causes or permits any invoice or description of the article sold by him to be false in any material particular to the prejudice of the purchaser; or
>
> (c) Sells for use as food for cattle or poultry any article which contains any ingredient deleterious to cattle or poultry, or to which has been added any ingredient worthless for feeding purposes and not disclosed at the time of the sale;
>
> he shall, without prejudice to any civil liability, be liable, on summary conviction, for a first offence to a fine not exceeding twenty pounds, etc. . . . ."

Section 1 (1) is not very explicit as regards certain foods. It was the intention of the persons responsible for the Act to insist on a guarantee of oil and albuminoids only in the case of those foods whose composition had been altered by s manufacturing process, e.g., oil extrac According to the wording of this section, howe the bye-products of milling wheat for flour sh come within this category, but it is gener agreed that this Section of the Act was not tended to apply to wheat milling offals.

The following poultry foods should be sold o guaranteed basis of oil and albuminoids :—

(a) Foods manufactured from the residues maining after the extraction of oil f oil-bearing seeds, e.g., soya bean mea

(b) Brewery and distillery bye-products, e dried grains and dried yeast.

(c) Fish, Meat and Blood Meals.

(d) Foreign foods, such as rice m maize gluten meal.

(e) Proprietary foods if they contain eve small percentage only of one of the ab foods.*

Section 6 (1c) protects the purchaser aga the presence of deleterious constituents in foo e.g., substances which would injure stock, undue proportions of worthless ingredients, e. excessive dirt or moisture.

It is well to remember that this Act applies sales of small quantities, and thus protects small man who buys by the stone, as well as large poultry farmer who usually purchases feeding stuffs in ton lots.

Purity of foods is a most important factor, while the Act protects the buyer in cases of gr adulteration, it is not always possible or desira to invoke the aid of the local administrators the Act in cases where the sample is either sim of inferior quality or in bad condition, or possi slightly adulterated. Such foodstuffs, howev should be refused, and it behoves the would purchaser to be well acquainted with the appe ance and nature of good and bad samples of various poultry foods. The writer therefore p poses to deal with each common feeding st seriatim, indicating points to be observed in examination of samples, prior to purchase.

1. CEREAL FOODS.

Wheat and its products.—Good whole wheat easily identified. Musty smelling or "bunte" samples should be avoided, otherwise diarrh may result. The presence of an appreciable p centage of weed seeds is undesirable, particula such seeds as corn cockle, which possesses pois ous properties, and is very common in fore wheat.

---

* In the case of these foods the seller can either giv guarantee of oil and albuminoids in the mixture, or state percentage of the material present (which comes within category of guaranteed foods) with the percentage of oil albuminoids in this material only.

The bye-products of milling wheat for flour are great importance in poultry feeding. There three main types :—

(a) Fine Offals (fourths, fine middlings, toppings, fine sharps, etc.).
(b) Medium Offals (thirds, coarse sharps, pollards, etc.).
(c) Coarse Offals (bran, fine bran, straight run bran, broad bran).

Class " a " should contain a considerable ount of flour, and should have a moderately ite appearance. The husk should be finely ound. Class " b " should contain much more sk than the previous class, but the husk should ll be rather fine. Class " c " should consist of large particles of husk, and any flour adhering the husk. In the case of patent flour mills bran amount of flour adhering to the bran is very all. Unfortunately merchants do not keep the ades standardised, as regards flour content or eness of husk, but turn out their offals to suit demand. Consequently wheat offals should ays be purchased on sample. Excessive moise—particularly in the case of bran—bad conion and weed seeds should be looked for.

Barley and its products.—Barley meal is usually de from inferior home-grown or foreign barley, ., barley not suitable for malting purposes. cessive husk, or the addition of oat husk, should noted. The latter is not easily distinguished m barley husk, except by microscopic examinan.

Dried Grains, a bye-product of the brewery and tillery, is a valuable and useful feeding stuff. erior samples may be met with which contain ticles of straw, oat husks and refuse material. n sweepings often find their way into dried ins, and can be detected by the large amount dirt in such samples.

Malt combs (or coombs) consist of the dried ots of germinated barley, formed in the protion of malt. Adulteration is easily detected, usually takes the form of kiln sweepings.

Oats and Oat products.—In buying whole or shed oats, " thin " samples should be rejected. h samples contain a large proportion of husk, ich is not easily digested by poultry unless very ly ground. Oat husks (or " shudes," as this terial is called in the trade) is a bye-product in preparation of oatmeal for human consump, and is largely used as an adulterant of feedstuffs. The feeding value of oat shudes is y low, and if fed in considerable quantities ht cause constipation and bowel trouble.

ussex Ground Oats is a popular food in some ricts. Its value varies considerably according to the quality of the oats and fineness of grind. In days gone by the Sussex millers always ed a small percentage of barley to prevent gging of the stones in grinding, since fine grind of the husk is very essential. In recent years, ever, the practice of adding considerable quans of barley has been adopted by some millers with the object, no doubt, of cheapening the meal, but prosecution has put a check on this practice. If matured dry oats are used, there is no need to add barley to produce a nice smooth finely-ground sample of this foodstuff. Good quality Sussex ground oats should be very palatable and possess a nice sweet smell.

Rye and Rye Meal.—This cereal is not grown to any extent in this country. A good sample is comparable to wheat in feeding value. Examination should be made for " ergot " grains, which contain a highly poisonous material.

Maize and its products.—Whole and kibbled maize and maize meal are usually of a high degree of purity, but the same cannot be said of maize germ meal. This feeding stuff should contain a large proportion of the germ of the maize grain (no sample is absolutely pure germ), but many samples are largely composed of ground maize. Maize germ meal has a yellowish appearance, and is more oily than ordinary maize meal. Chemical analysis is really necessary to distinguish a good sample from an inferior one. Maize gluten meal is not common in this country, being essentially of American origin. It is a bye-product in the manufacture of cornflour and other edible maize foods. This type of maize product is moderately high in protein, and is easily distinguished from maize or maize germ meal. In colour it varies from light to dark brown. It has a coarse appearance, and the absence of flour is particularly noticeable.

Rice Meal.—This imported feeding stuff arrives in this country chiefly from Rangoon and neighbouring Eastern ports. . In colour it may vary from yellowish-white to dirty brown, depending on the variety of rice and the amount of rice bran (as distinct from rice husk) present. Excessive rice husk (rice shudes) is the chief adulterant, and can be easily detected by chewing a small quantity of the meal. The amount of husk remaining in the mouth is a good indication of the quality of the meal. Mustiness or bad flavour are common faults, and should be looked for.

(To be Continued.)

LAINDON LAYING TEST—SIXTH PERIOD.

Section 1.—Light Breeds (5 pullets).—F. Freeborn (W.L.), 445 eggs; H. J. Thomson (W.L.), 398; T. Miller, 371. Monthly certificate, F. Freeborn.

Section 2.—Heavy Breeds (5 pullets).—E. V. Bazin (R.I.R.), 431 eggs; H. J. Thomson (R.I.R.), 373; W. Belsham (R.I.R.), 325. Monthly certificate, H. J. Thomson.

Section 3.—Light Breeds (single bird).—East Anglian P.F. (W.L.), 113 eggs; W. Dillenz (W.L.), 107; Miss N. M. Grubbe (W.L.), 100. Monthly certificate, Miss N. M. Grubbe.

Section 4.—Heavy Breed (single bird).—C. Sheridan (W.W.), 122 eggs; H. Jones, 113; F. Freeborn (R.I.R.), 100. Monthly certificate, H. Bush.

Section 5.—Gift, any breed.—E. V. Bazin (W.L.), 107 eggs; W. Dillenz, 100; H. Maycock (W.W.), 77. Monthly certificate, W. Dillenz.

First-class certificate for highest scoring pullet for month, Miss N. M. Grubbe.

This brings us to the half period of Test, and I am pleased to report that the birds are still in excellent condition, having had only four pullets isolated for minor ailments in the early periods. The egg production has now reached 83 /3rd per cent., and I am sure all competitors will be pleased with the results up to this period, in spite of the bad weather we have had to contend with.

KITTY MARIES (Manageress)

Angora Rabbit Wool Farming. II.

By the LADY RACHEL BYNG.

The annual yield of wool per adult rabbit of the best strains should average 10 to 16 ounces. This amount of wool can only be harvested from the best wool-producing strains. The yield of wool from each individual rabbit varies as much, even in the best strains, as the egg yield from individuals in good laying strains. No farmer can guarantee that any rabbit he sells will give a certain amount of wool, for the wool yield depends very much upon the skill of the owner in feeding judiciously, in keen observation, and in dexterity in choosing the psychological moment for plucking or clipping.

CLIPPING AN ANGORA.

At the moment there is a diversity of opinion as to the best method of harvesting the wool. Some farmers adopt the English method, i.e., clipping. This is done with sharp scissors, preferably with rounded points, like surgical scissors. This plan demands great care on the part of the clipper for the rabbit's skin is very elastic and elusive, and it is difficult to prevent snipping it occasionally.

Another disadvantage of clipping is the dang of cutting the new growth of underwool, thus i peding the progress of next quarter's harves One advantage clipping has over plucking ; i. it can be done at any time, not necessarily wh the wool is ripe. It can, therefore, be done all once.

The French plan of harvesting the wool "plucking." This can only be done when th wool is "ripe." The wool is said to be ripe wh it comes away quite easily when pulled betwe the thumb and finger.

Some English farmers mai tain that this process is cru It is only painful if resorted **before** the wool **is** ripe ; to this is decidedly cruel. Pluc ing, when the wool is ripe, is n only painless, but it appears be soothing. Angoras w usually sit quite contentedly grooming stool or lap, sometim dozing during the operation.

In plucking there is no fear thwarting the coming harves for only the moulting wool gathered. Often after a rabb has been completely plucked, is covered by a thick down over a quarter of an inch growt of the next quarter's wo Plucking cannot often be do at one sitting, as the wool seldom ripe all over the body the same time. In any case, winter time it would be unwi to pluck completely at one tim

Continued at Foot of Column on Page 26

PLUCKING AN ANGORA.

Correspondence.

EGGS BY WEIGHT.

To the Editor of "Eggs."

ir,—You published a letter some time ago under above heading.

Vhile sharing your correspondent's chagrin at being pelled at this season of the year to accept less English New-Laid than the market price of Danish s, I think the reason is obvious, and I think your respondent has overlooked it.

t is not a question of the total weight of a thirty-en case. It is a question of the weight of each vidual egg. No case weighing 54lbs. of eggs for ty dozen could be marketed to compete with ish 18lbs. eggs, unless each egg in the case conned, as do the Danish, to the correct standard.

our correspondent will have noted that the ish second-grade sell as 16lbs. eggs.

et we try and compete with Grade 1 English, vary- from a bare 2ozs., and, in some cases, 1¾ozs., to largest size, and the buyer has no guarantee, as has with a Danish case, of the quality he most fers, uniformity.

o, Sir, we do not compete with the Dane; we pete, and not successfully, with the Chinaman.

he only advantage an English egg can, and should e, is freshness, and this advantage is entirely own away by methods of marketing.

n this subject I propose to write to you again, but he meantime I should urge that the Society press the marketing of eggs by weight. That is, the ght of each individual egg—not the weight of a nce collection of eggs of all sizes.

n addition, I hope they will press for the abolition rade 1, as at present in favour, and demand that glish eggs should be marketed, as Danish are, in grades—for the larger-sized egg 16lbs. and 18lbs., the 120, which method would, I think, enable the ducer to obtain a more reasonable price for his t produce.

Jnless something is done to improve our methods, ear that the marking of foreign eggs may have effect opposite to that which is hoped for.

I am, Sirs, yours etc.,
H. G. SWAN.

DELAYED HATCHING.

To the Editor of "Eggs."

ear Sir,—Replying to your correspondent in last k's "Eggs," as to delayed hatching at 700ft. altie, my farm is situated from 850 to over 1,000 feet the Dartmoor hills. I find that by running my bators at 105 degrees the first week, 104 the nd, and 103½ the third week, that all the chicks out by mid-day on the 21st day. I do not supply any moisture for the first week, filling the water tray at the commencement of the second week, and when that is used up do not give any more except a few drops poured on a tray very hot on the 19th morning. This has the effect of steaming them. I find this method answers well here with me.

Yours faithfully,
H. H. BELLAMY.

ANGORA WOOL FARMING.

To the Editor of "Eggs."

Dear Sir,—In reply to Mr. S. F. Peet's enquiries.

(*a*) The estimated capital required to start an Angora Wool Farm depends entirely upon how much the farmer wishes to harvest per annum.

I started 2½ years ago with six rabbits, costing £30. I made their hutches out of old packing boxes and pieces of wire netting. From this beginning I have now 400 Angoras, and a carpenter made hutches to house them all.

(*b*) Angoras have lived to 15 years of age, and given 16ozs. of wool annually up to 12 years of age.

(*c*) An Angora can be clipped or plucked every three months.

(*d*) If surplus bucks are castrated at three to four months of age, they yield more wool than stud bucks, and grow to a far larger size.

(*e*) The wool yield of the *best* Angoras varies from 10 to 16 or more ounces

(f) Unlimited clover hay, as much green food as possible, fresh water, 1oz. corn daily is the food. One should easily clear 20s. annually off each adult rabbit.

Yours faithfully,
R. T. BYNG.

ANGORA RABBIT WOOL FARMING—Continued.

It is quite a wise plan to clip in winter time, leaving always a quarter of an inch of wool on animal, reserving the plucking process for the six summer months.

In business-like Angora farms each animal should have a record of any wool it has yielded. On this record should be entered all wool taken from the rabbit—matts, combings, etc.—although only wool of the best quality should be sent to the spinners, for this is the wool that realises top price. Up to the present time the spinners give no preference to plucked or clipped wool, so farmers can please themselves as to which method they adopt.

The wool is kept in empty tin boxes until a sufficient quantity has been collected for sale. The spinners buy any quantity from 1 lb. upwards in weight. When the time arrives for dispatching the wool, it is easiest packed by rolling it gradually within newspaper, not attempting to wrap it up in one portion as it were; it can also be packed in strong paper bags. Being very light in weight, it is bulky to store, though it can be pressed within a moderately small compass.

ANGORA WOOL FARMING.

To the Editor of "Eggs."

Dear Sir,—I read in your issue of 8th April Mr. H. F. Peet makes enquiries *re* Angora Wool Farming May I be permitted to give the following as my experience:—

(*a*) This entirely depends on the size of the farm one wishes to run; 100 rabbits kept for wooling alone should bring in about £60 profit per year.

(*b*) About four to five years.

(*c*) Plucked every three months, but should be combed and groomed twice a week to keep the wool free from mats.

(*d*) Yes.

(*e*) Ten ounces or over.

(*f*) Hay, green food and mash are necessary.

If Mr. Peet wishes any other information, I shall be pleased to advise him in any way I can.

Yours truly,
H. J. GARDNER.

LEG-WEAKNESS.

To the Editor of "Eggs."

Dear Sir,—There has been a good deal of correspondence in "Eggs" concerning loss of chicks and leg-weakness.

It may be a matter of interest to readers to know that out of my last three hatches—March 4th, 17th, and 27th—I have only lost one chick out of 216 hatched, and that was rather a weakling. I am a comparative novice, but it occurred to me that some form of disinfecting would help matters, and I, therefore, experimented, and watered the day run of the brooder house every evening after the chicks have retired, and the night compartment every morning after the chicks are about three or four days old. I have a deep layer of sand, with a little peat moss mixed with it, and fresh hay chaff on the floors of both compartments, and add a sprinkling of fresh as required, and rough over after disinfecting. The watering is done with a weak solution of disinfectant and water. Whether this has had any effect, or whether it is merely coincidence, I do not know; but I certainly have an extraordinary healthy lot of chicks doing extremely well. In my first batch which were *not* treated in this manner the loss was somewhat severe. Of course, the weather since then has been more considerate.

Yours faithfully,
C. H. DIXON.

COMMUNITY POULTRY FARMING.

To the Editor of "Eggs."

Dear Sir,—Mr. Morton Nance, in your issue of 1st April, accuses Mr. Hall of stumbling over the same error as others have done. I am afraid Mr. Morton Nance has stumbled over an error himself.

He practically states that organisation is the for disagreement. What is organisation but the and method of one supreme individual? Conside what a lot of disagreement and difference of opi there is to-day, especially in the poultry world, else could it be? The writer also says: "Give good business man—*not an experienced poultryn* you will have a business proposition."

Quite right, but will that proposition bring desired result—*a living profit?*

He then contradicts himself by saying: "Wit good manager almost any sort of concern will ahead." Now I ask him what is a good manager, an *experienced poultryman?*

It is the experienced poultryman who will bring profit in, and not the business man who has ha experience of commercial farming.

Community poultry farming is at the present m discussed, simply because certain individuals failing to make their poultry farms pay, and therefore, crying out for others to help them. Ins of sitting at home talking and grumbling about co tions, why do they not make an effort to help th selves?

If the failures cannot stay the course let them pushed out, with little loss to the industry.

After all it is individual enterprise which will duce the best results, consisting of quality instea quantity, and thereby create a sound and progres poultry industry in this country.

Combination does not necessarily mean che food, and better egg prices. The *real* difficulties not dear food and low prices of poultry produce, lack of economical management and system. I m add that if would-be poultry farmers possess better knowledge of buying food, and marketing duce, then *a living profit* would be their reward.

Yours truly,
" EXPERIENCE

COMMUNITY POULTRY FARMING

To the Editor of "Eggs."

Dear Sir,—Mr. A. H. Morton Nance makes a take when he says I have stumbled over the s error as others, as I have never been so foolish a place my money in such a risky undertaking community or co-operative business of any kind. T is a good illustration of the total failure of Commu Farming in Genesis 13th chapter, 1st to 12th v inclusive; with a good manager he states almost sort of concern will go ahead. This is well illustr in Genesis, 30th chapter, 27th verse, to end of c ter. Here you have the Manager of a Co-oper Society, with not a penny invested in the soc becoming exceedingly rich, while the sharehold reduced to poverty, with nothing left save a cattle. Mr. Nance in effect states than an experie poultryman is not a good business man. Will he us how a man can be a good business man wit experience?

He states my man is not making the progress c

surate with the amount of work and capital
nded. This is equivalent to saying he is a failure.
man a failure, and he has won the following
ficates awarded by the Kent Education Commit-
for the best managed Poultry Farm in Kent:—
Certificates of Merit, Seven Special Certificates,
two Champion Certificates—total eleven. He has
ved the congratulations of many poultry-keepers,
is known to thousands of people (by repute) as a
successful man. He has confidence in himself—
is proved by his articles in "Eggs" and other
rs. He has been a regular reader of "Eggs" for
than six years—what man is there that could
"Eggs" for this length of time, and then turn
a failure?

ie price of foods and eggs, etc., is governed by
ly and demand, labour largely by the cost of
g. Co-operative Poultry or Egg Societies cannot
ce the cost of food one penny per ton, neither
they increase the price of eggs. How would Mr.
ce propose to minimise or reduce the cost of
ır, and what is a LIVING PROFIT? I look upon
try-keeping as a business in which to invest
al for someone else to earn the living.

st to test Mr. Nance's business ability, will he
is what it cost him during the last year to produce
zen eggs—said cost to include labour, rent and
—in fact, total cost, after reducing all income,
as surplus stock, old birds, etc., sold, leaving
balance of expenditure to pay cost of producing
.

Yours faithfully,
W. HALL.

WHICH BREED?

To the Editor of "Eggs."

ear Sir,—After six years' commercial egg farming,
d that Wyandottes have given a very fine profit;
les a fair profit, Leghorns barely covered expenses.
good prices obtained for the cockerels and old
have helped the Wyandottes considerably. Also,
d they beat the other breeds for eggs in October
November. I wonder if other egg farmers find the
e?

Yours faithfully,
"EGGO."

East View, Irchester, Northants.

ar Sir,—I wish to take this opportunity to express my very
appreciation of your paper "Eggs," which has been and
very great help to me. I often say to my friends, "When
ubt on poultry matters turn to 'Eggs.'"

Yours faithfully,
(Signed) HUBERT J. FROST.

Menadews, St. Clements, Truro.

ar Sir,—"Eggs" is packed full of information from cover
ver, and contains more practical information than any two
mporary journals.

Thanking you, yours faithfully,
(Signed) L. CHOAK.

Housing.

By **MARTIN GRAY.**

The benefits of good housing are many. If a good strain of a good breed of poultry is kept, more eggs will result from birds well housed than if they are kept in any old place. Needless to say, mongrels, however well housed, will not lay like a pure-bred fowl kept under the same circumstances.

Then if there is good housing there will be less disease on the farm. Many of the well-known and common diseases are the result of bad housing, combined with bad management. The poultry industry is such that every possible way of saving must be made use of. Ten birds suffering from roup which cease laying for six weeks or so in the winter will have lost their owner £3 in eggs alone, not to mention the risk of the disease spreading, and infecting the rest of the stock. Three pounds is not a big item, perhaps, but it is the small items that combine and make the large ones, especially as this kind of thing can be avoided. It is quite bad enough having troubles without asking for them. Now supposing that you desire to sell your poultry houses. If you have had good ones to start with, and you have kept them in good condition, you will be able to sell them quite easily, and probably obtain a good price for them. Contrast this with a house that has been obtained very cheaply, and has been in use, say, two years, and then when it is intended to be sold is found to be warped, rotten and full of vermin. What chance will there be of selling such a house? None, unless it can be disposed of for firewood.

A good house cannot be bought for nothing—some people think it can. We have all seen Blank's advertisement describing a poultry house that will hold 30 birds, is guaranteed to increase the egg yield 100 per cent., is constructed of the best timber, and is £4, carriage paid to your door. Well, there is only one answer to these advertisements. Don't. You are only throwing away hard-earned money in dealing with such firms. The capacity of these cheap poultry houses is always over-estimated. They will probably hold 30 birds if they were packed as in a crate. Three square feet is usually advocated for a bird, but I have found that 2½ square feet is ample, where the birds are kept on the semi-intensive system, i.e., with grass run for the fowls.

There are four types of houses in use to-day for the housing of poultry. They are:—

(a) The lean-to.
(b) The span or ridge.
(c) The three-quarter span.
(d) The apex.

The lean-to type is cheap to construct, and is very suitable for small houses. It is probably the most common house in Great Britain at the present day. Its disadvantages are that it suffers from air pockets, with the result that the air inside is most stagnant, where it should be most fresh. The result of this is that the birds are either breathing foul air or they are in great draughts when the wind is blowing from the direction that the house faces. This house is more conducive to colds and their developments than any other house in use to-day.

The span or ridge type of house is dearer to construct than is the lean-to, but the difference in cost is worth the better health of the inmates. There is excellent ventilation, but there are no direct draughts on to the birds. The worst winds have no effects on the birds; in the coldest weather they are quite warm, and in the hottest weather they are not overheated. This even temperature and absence of draughts are great advantages, and are very conducive to high winter egg yields. The incoming air is drawn up through hoppered windows, and sweeps out the hot air from above the birds on the perches through the ridge of the roof. The air is consequently always fresh, and as the windows are hoppered, no cold winds can affect the birds.

The three-quarter span type of house is supposed to combine the advantages of the lean-to type and the span. In practise I doubt whether this is the case. I think that they would be more successful if the sharper incline was to the back of the house, instead of to the front. The stress on the roof is not so equal as on either of the preceding ones. Therefore, I shall go into no further details.

The fourth and last type of house is the "Apex," which has recently been discussed in the poultry press. It has the great advantage of being cheap to construct, which is important. It has also splendid ventilation, without draughts, and should also be very secure in gales, such as we have just experienced. Its greatest disadvantage, in my opinion, is the trouble associated with it when work has to be done at the base angles. If it is made high enough to avoid this trouble, it will not be secure against the gales, and if it is made wider than 9ft. it will be very awkward to do anything inside without bumping one's head. Supposing the house is 9ft. high and 7ft. wide, the angles at the base will be 60 degrees, which is too small to be comfortable. Also the fixing of nests and dry mash hoppers will be rather a difficult procedure.

There are various sizes of houses suitable for poultry. There is the 7ft. by 5ft., which will hold 12 birds, at a pinch it will hold 16 for laying purposes. This size is also suitable for a single breeding pen, although for this purpose I prefer a larger house divided. This house will cost about £5 complete. It is, of course, of the lean-to type.

The next size is the 12ft. by 9ft., which will hold 40 layers. Divided it makes two very suitable breeding pens. There is less labour needed than when using two smaller breeding houses, such as the 7ft. by 5ft. just described. If the house is divided it can be used also as a laying house on the alternate run principle after the breeding is finished. This size of house is very useful for brooding chicks; two anthracite stoves can be used in it if it is divided. Personally I use four oil hovers with the house divided into four by hessian hurdles. This size will cost about £20, and, of course, is of the span type.

Similar houses are the 14ft. by 10ft., which holds 60 layers, and costs £27, and the 18ft. by 12ft., which holds 80 layers, and costs £33.

Lastly, we have a very economical house, th the 24ft. by 12ft., which holds 120 birds, and costs This size of house is, perhaps, the most popular a 100 size unit is most in vogue at the present day. house is very suitable for housing birds on the co system. There are, of course, houses which hold 2,500 birds, but these are not common, and I much doubt whether they are very profitable. T houses would be very difficult to sell unless the was sold as a whole.

Square houses are the cheapest to construc will be seen from this example. In a house of lean-to type, 9ft. long by 4ft. wide by 5ft. high at front, and 4ft. at the back, compared with a hou the same height, and 6ft. long and 6ft. wide, the a difference of 14 square feet of matchboarding, to mention framing. Both these houses have the area of floor space, and will hold the same numb birds. In a small house of this size there is a sa of 5s.—not much perhaps—but, again, it is the items that matter. Obviously one cannot go to extreme, and build a house 50ft. by 50ft. Al advantages would be counterbalanced by the siz roof and the huge supports that would be neede it. When a house is square it is much stronger an oblong one, and will withstand the wind well there will be an equal area of wall for each preva wind.

There are two substances that are used for the struction of poultry houses, they are wood and felt shall not deal with brick or concrete houses, as are very rarely seen occupied by poultry. Wood, viding it is properly looked after, is very durable, not very expensive. Felt is cheap, but is very fra and now wood has come down in price, it is ha worth bothering about.

Either tongued and grooved matchboarding weather boarding may be used if the house is to wooden one. I much prefer the former to the la Weather boarding often warps lengthways, whic impossible with good tongued and grooved boa which are fixed vertically.

As regards the thickness of wood $\frac{3}{4}$in. is the suitable. Thinner wood than this is apt to allow inside temperature of the house to vary too m while thicker wood will make the house very hea it has to be moved. Incidentally $\frac{3}{4}$in. material by time it is ready for a house is actually only 5/ thick, and 5/8in. material is only $\frac{1}{2}$in. thick w machined. Wood loses 1/16in. on either side w being machined. This is a point which is often understood by the buyer, who, ordering a house of material, finds that it measure only 5/8in., and th the maker has swindled him.

The framing of a house up to 9ft. by 5ft. shoul of 2in x 1$\frac{1}{2}$in. material, between 9ft. x 5ft. and 14 10ft. 2in. x 2in. will suffice; above this size 3in. x will be necessary. If the floor is to be a wooden 2in. x 2in. will do for the smaller houses, and for larger ones 4in. x 2in. will be necessary. Some ma fit 3in. x 2in., but I think 4in. x 2in. is much better

There are many substances for the floor—they wood, concrete or earth. Wood is rather expensi the floor is to be a large one, seeing that 4in. x joists have to be used, but it is very dry, and will long as the house. providing that it is set on bricks ıen the house is erected. There is also very little ouble from rats. The flooring must be of at least n. material. Concrete is cheap, and if of good quality vermin proof. A 5 to 1 ratio mixture is recommen- d, that is five of cinders, etc., to one of cement. Its sadvantages are that it is rather cold, and that it is t to sweat. The latter trouble can be surmounted applying pitch to the surface of the concrete when has dried. Another disadvantage of concrete is that e local authorities may consider that a house with a ncrete floor is a permanent one, and may rate it cordingly.

An earth floor is supposed to be a preventative for g weakness in chicks, though this is a debatable point. nless ½in. wire netting is run under it vermin will ay havoc with it.

Whatever the floor is made of it will have to be vered with a litter of some description. There are ur litters in use to-day—they are peat moss, cavings, raw, and wood refuse. Peat moss is sanitary, very sorbent, and will last a long time. However it soon comes dusty, and often causes colds by irritating the strils. It is also rather dear. Cavings make a good eap litter, but it does not last long. Straw is often lvocated, however in wet weather it is apt to mat dly, and will have to be renewed. Sawdust is good d very cheap, but it is very liable to get into the ultryman's eyes when catching birds. Wood chips e very cheap and very sanitary if of pine or cedar. hey have the advantage of never becoming dusty, and ey also last a considerable time. I prefer wood ips to any of the litters previously mentioned.

(To be continued.)

(The above paper was read before the Gloucester- ire Branch of the S.P.B.A. by Mr. Gray).

THE SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

APPLICATIONS FOR MEMBERSHIP.

son, Harold, Wood Close House, Chapel Hill, Linthwaite, near Huddersfield.
mbril, H. P., Court House, Linton, Ross-on-Wye.
ay, J. A., Glenside, Dundonald, Belfast.
reatbatch, E. F., Lower Morgay P.F., Staplecross. Hawkhurst, Kent.
ice, G. F. H., Whiting Works Farm, Old Roman Road, Guston, near Dover.
utchinson, Herbert, Lingfield P.F., Cowling, Keighley.
al, F. W. (junr.), Eastcote Farm, Easter Green, near Coventry.
in, E. Dudley, Bolingbroke Rectory, Spilsby.
Halloran, M., 6, Castley Lane, Pool, via Leeds.
ensley, L R., 4, South Station, Bottesford, Nottingham.

Saltburn-by-Sea, Yorks.
11th November, 1924.

"Dear Sir,—I appreciate 'Eggs' tremendously—there is mething good on every page, and it is really the **only** Poultry per worth reading. I have found the other papers a sheer ste of time."

Yours faithfully,
(Signed) (Miss) E. ARMSTRONG.

Editorial.

NATIONAL POULTRY COUNCIL.

MEETING AT CHESTER.

The Quarterly Meeting of the National Poultry Council was held in the City Hall, Chester, on Wednesday, April 15th, the President (Mr. Tom Newman) being in the chair.

A hearty welcome was extended to the delegates by the Right Worshipful the Mayor (D. L. Hewitt, Esq.), who referred to the ancient history of the city, and said, while they were very proud of the past, they were equally proud of the fact that they were as progressive as any city in the country. The Royal Show was to be held at Chester in June. He wished the Council all success in its deliberations.

On the proposal of Mr. C. N. Goode, seconded by Col. Sandbach, a very hearty vote of thanks was accorded the Mayor.

REPORT OF EXECUTIVE COMMITTEE TO THE NATIONAL POULTRY COUNCIL.

The Executive Committee beg to report that two meetings have been held since the Council at Cardiff on January 15th, 1925.

Affiliations.—The following applications for affiliation have been received and approved since the last meeting :—

The East Grinstead Poultry Association.
The Dorset County Education Committee.

Patrons.—The following Patrons have been elected since that meeting :—

Mrs. Hunter, Ringfield, Knockholt, Kent.
Mr. J. R. Anderson, "Brae-Neuk," Mid Calder, Midlothian.
Lady Anson, The Old Rectory, Bradford Abbas, Dorset.
Mr. D. Keith Nuttall, Corndean Farm, Winchcombe, Glos.

Sub-Committees.—Reports will be presented by various Sub-Committees which are commended to the consideration of the Council.

Preservation of Eggs.—The Executive Committee is pleased to note the efforts that are being made, as suggested in its last report, to organise the preservation of eggs on a more extensive scale than hitherto. There can be no doubt but that the fall in prices of eggs which has taken place this spring is due to greater production, combined with reduction in the purchasing power of large numbers of the population. Returns would indicate that the average consumption, whilst equal to pre-war days, does not exceed 120 eggs and one fowl per annum, which, it may be anticipated, could be greatly increased when conditions are more favourable.

Arbitration Board.—In view of the resolution adopted by the Council on January the 15th for the appointment of an Arbitration Board, the Executive Committee have given careful consideration to this question, which is a very important one, and submits to the Council a report as to the constitution and procedure of an Arbitration Board.

Poultry Advisory Committee.—In accordance with the resolution adopted by the Council at Cardiff, Mr. A. S. Juniper, C.C., and Mr. Ambrose Keevil, O.B.E., D.S.O., have accepted nomination as members of this Committee, representing the Distributing Trade. It is satisfactory also to announce that the Minister of Agriculture has appointed upon the Committee a representative of the National Farmers' Union. There is an evident movement in the direction of improved methods and extension of poultry-keeping as a branch of agriculture.

Agricultural Statistics Bill.—With reference to a measure now before the House of Commons for the more complete collection of statistics in connection with farming, a letter has been received from the Minister of Agriculture stating that this Bill is intended to apply to poultry as well as other branches of livestock.

Income Tax.—Since the previous meeting of Council, intimation has been received that the Inland Revenue Authorities have decided to carry an appeal to the High Courts against the decision of Special Commissioners that poultry farming is Husbandry within the meaning of the Finance Acts, and it is anticipated that this will be heard without delay. That selected is the case of Mr. S. G. Hanson.

After careful consideration at a Special Meeting of the Executive, held for the purpose, where the opinions of Counsel and of Solicitors were submitted, it was agreed that, in view of the importance of this case to the Poultry Industry as a whole, and that the Inland Revenue has selected it as a test, the National Poultry Council should be responsible, from its Legal Defence Fund, for 50 per cent. of the nett costs incurred in defence up to the sum of £200. Since that decision was arrived at, the National Farmers' Union, which had already undertaken to share expenses in defending another case if it were heard first, has agreed to bear 25 per cent. of whatever amount the National Poultry Council is called upon to pay, up to £50.

It may be hoped that the decision of the Special Commissioners will be confirmed in this case, and that such will be accepted by the Inland Revenue as determining the position of poultry-keepers in respect to Income Tax. Should, however, the Inland Revenue under those circumstances decide to carry the case to a Higher Court, the National Poultry Council will then have to consider whether, in view of the amount available in its Legal Defence Fund, it can do more. On the other hand, should the decision be in favour of the Inland Revenue, it will then be necessary to conside whether poultry-keepers shall make a furthe appeal.

In the meantime, it may be noted that the Inlan Revenue have consented in several instances t suspend action entered against poultry farmer where claims have been made that they should b assessed under Schedule D, until the above case i heard. In others, notably that of Mr. Wm Hamnett, Blackpool, and Mr. Frank Snowder Keighley, the Special Commissioners have decide that they shall be assessed under Schedule B. A a result in several instances the Local Inspector have agreed to assessment under Schedule B o the ground that poultry farming is Husbandr within the meaning of the Finance Acts. It i recommended that wherever pressure is being pu upon poultry farmers, application should at onc be made for suspension on the grounds state above.

Rating of Poultry Farms.—It is satisfactory t report that in several instances where the assistance of the National Poultry Council has bee solicited, local Assessment Committees have decided that land occupied for poultry farming, apar from the buildings, shall have the benefit of th three-quarter deduction under the Agricultura Rates Act, 1923. Several cases may be cited i support of this position. Where demands are bein made which would deprive poultry farmers of thi concession, application should at once be made t the National Poultry Council.

Killing of Fowls by Dogs.—Some time ago a report was made by the S.P.B.A. that a membe living near Spalding, Lincolnshire, had 17 chickens killed by a greyhound. She made clain for compensation, and on refusal of redress th case was taken into the County Court, where £2 1s. 10d. was awarded to her. The owner of th dog entered an appeal, which was heard in th King's Bench Divisional Court on March 17th, an the judges reversed the decision named. This i a very serious question for poultry-keepers, an the Executive Committee recommend that step should be taken to obtain an amendment of th Law as laid down by the judges referred to.

Sale of Diseased Birds.—For a considerable tim the National Poultry Council has been endeavourin to obtain issue of an order that poultry offered fo sale in local markets or auctions shall be inspecte the same as are larger stock, owing to the fac that a vast amount of disease is undoubtedl spread throughout the country in this manner. In addition thereto, a considerable amount o evidence has been brought before the Nationa Poultry Council as to the sale of birds which ar diseased. It is felt that steps should be taken t secure a prosecution by the Ministry of Agricultur and Fisheries where that is proved. It woul appear that in some instances owners of bird have, on the appearance of an infectious disease sold poultry that has been exposed to contagion

nd, further, dealers who buy birds in Ireland
l these whether they are in a healthy condition
not. So far as can be judged, the dispatch of
ds affected with disease is an offence against
e law. Purchasers of birds are recommended
return at once any that are affected, and, in all
ses where the vendors are not known, to rely
on the deposit system for payment.

National Poultry Parliament.—The dates fixed
the holding of the National Poultry Parliament
Harrogate are July 14th to 17th, and arrange-
nts are being pressed forward, of which par-
ulars will be announced in due course. It is
rnestly hoped that there will be a large attend-
ce of members of Council, delegates of Societies,
d patrons at this popular centre.

A. T. WALKER,
Chairman, Executive Committee.

FINANCE.—The Treasurer (Mr. A. H. Brownson) sub-
tted the financial report. He said they were nearing
end of the financial year, and although the position
s slightly better than at the same time last year, it
s still unsatisfactory. Through lack of financial sup-
t they were severely handicapped in their work. The
den was borne by the few, and the many were con-
t that it should be so. He was pleased to say there
s a small increase in the number of patrons. He
ved the adoption of the report, which was seconded
Mr. Meekings, and carried.

MARKING OF FOREIGN EGGS. — Mr. Street-Porter
airman of the Parliamentary Committee) stated
reference to the Marking of Foreign Eggs, that they
been accused of letting this slide. He would like
se critics to know that the committee had done,
were doing, all that was possible on this and other
tters. It was proposed that a deputation from the
ncil should wait upon the Agricultural Committee
the House of Commons. The Bill this time would
a Government measure, and there was every pros-
t that it would be passed into law. It was a totally
erent matter than when it was a private members'
: They could not force the hands of the Cabinet. It
also intended to take action with respect to pre-
vatives used in liquid and dried eggs imported from
na and other countries. The importation of these
s was forbidden in the U.S.A. and European coun-
s. He moved the adoption of the report.

r. C N. Goode expressed the hope that efforts
ld be made to secure the marking of imported table
ltry. Belgian fowls were sold in this country as
urrey " or " Sussex," and that was unfair. There
ld be no difficulty in the marking as it could be done
n the back of the bird. Mr. Street-Porter de-
rred. He thought the difficulties were too great.
y had not been able to do it in respect to foreign
t. Mr. Powell-Owen and Mr. Dowden supported
Goode, and after some discussion the President
rvened, and remarked he thought that the deputa-
could make representations to the Agricultural
nmittee, and Mr. Street-Porter agreeing to this, Mr.
de expressed his satisfaction.

LAYING TRIALS COMMITTEE.—Mr. Brownson, the Secretary, reported that a meeting had been held the previous afternoon. Dr. Crowther had been unanimously elected Convener and Chairman. The Committee had approved for registration the following Laying Trials:—

Harper-Adams' Agricultural College.
Lancashire Federation of U.P.S.
Lancashire Utility Poultry Society.
The National Laying Test (Bentley).
St. Dunstan's Egg Laying Test.
Northern Utility Poultry Society.
Yorkshire Federation.

The report was adopted.

ARBITRATION BOARD.—It was agreed that the selection of the Board should be left in the hands of the Executive Committee. It was suggested that the Board should consist of 12 members, and that only three should sit.

RESPONSIBILITY OF OWNERS OF DOGS.—The Secretary stated that in the case, Walton *v.* Henson, the plaintiff had lost on appeal. It was a peculiarly hard case, as 179 birds had been killed, and it was necessary to secure some alteration in this law which appeared to relieve owners of dogs of all responsibility should their dog kill fowls. Mr. Goode pressed the Council to take action, as two very bad cases had occurred in his own village. After discussion it was agreed that the Secretary should consult the Hon. Solicitors, and the Parliamentary Committee should take action.

CONFERENCE ON MARKETING. — The President said that he was anxious that a very full discussion should take place on this important resolution to be moved by Mr. Leslie Williams. Therefore he proposed to take it before other items on the agenda:—

(a) Conference on Marketing (Mr. Leslie Williams):

> " That the National Poultry Council shall call a Conference in London at an early date, to which shall be invited representatives of the producers and all branches of the distributing trade (inclusive of co-operative societies and wholesale and retail egg dealers), with a view to ascertaining means by which the credit and values of British eggs may be enhanced, and thus meet the competition of well-marketed imported eggs; also to consider the desirability of urging the Government to pass legislation with a view to registering dealers and controlling the marketing of eggs on similar lines to those adopted in Ireland and Denmark."

Mr. Williams, speaking in support of the resolution, said that such a conference was highly desirable. The increase in the importation of eggs had been remarkable. They had no organisation to meet it. Their eggs were badly marketed, and it was necessary to do something to meet the competition of well-marketed, imported eggs, and to enhance the value of their own produce. The British market was the best in the world, and their competitors were well aware of the fact. and were taking advantage of the slackness of the home producer. The matter was urgent. He said he understood that the National Farmers' Union was keen to support the Conference, and Sir Herbert Matthews, of the Central Chamber of Agriculture, had written to ask if they could be permitted to send a representative. Mr. Powell-Owen seconded the resolution. Mr. Goode spoke in support. He said that in the auction markets he found there was little to be gained by grading; frequently second grade eggs fetched as high a price as first grade. The President said he thought this was due to the method of sale. He had received many complaints to the effect that auctioneers would sell the first case, and ask a big buyer if he was prepared to bid for several cases at a time. This prevented the smaller buyer competing. The Secretary spoke of the cost of convening such a conference which, he said, would probably amount to from £75 to £100. Colonel Sykes said that the Council should not take on such a big responsibility without counting the cost which he estimated would run into four figures. Mr. Street-Porter said he could not follow Colonel Sykes; that expense might be incurred as a result of the deliberations of the Conference, and in carrying out any decision at which it might arrive; but it would not be borne by the Council alone, as it was proposed that so many bodies interested should be asked to send representatives. After further discussion, in which many members took part, the resolution was unanimously agreed to, and the arrangements were left in the hand of the Executive Committee.

Sale and Transit of Diseased Poultry. — The Secretary said that many serious complaints had been received of the sale of diseased poultry, and their exposure in the auction markets. There appeared little possibility of the Council being able to induce the authorities to appoint inspectors. He understood it was an offence to send diseased by rail. Mr. Street-Porter said the President had made a valuable suggestion—it might possibly be made an offence to expose diseased birds for sale, and conviction be made on information laid by a common informer. It was eventually decided that further enquiries should be made and reported at the next meeting of the Council.

Hunts and Compensation. — The Secretary reported that adequate compensation had been secured for Mr. D. Keith Nuttall, for losses sustained by foxes, after the Hunt had refused to entertain the claim he had made personally. Mr. Nuttall had shown his appreciation by becoming a patron. A far worse case was that with the East Kent Hunt. Here foxes had destroyed 150 pullets, and a claim had been made for £70, which he considered reasonable. The Hunt first denied liability, then offered £5, which was wholly inadequate. The Council had pressed the matter, and secured the good offices of the Masters of Foxhounds' Association. The Hunt had then stated it had no funds, and the M.F.H. suggested that a subscription should be made

National Poultry Parliament.—The Secretary said that arrangements were well forward for the meeting of the Parliament at Harrogate, on July 14th-17th, and a most interesting programme had been arranged.

Colonel Sykes proposed a very hearty vote of thanks to the Mayor of Chester for his courtesy and kindness during the visit of the Council to this ancient and beautiful city, and requests that he will convey to the Corporation the warmest thanks of its me bers for permitting it to meet in the City Hall. T was seconded by Mr. F. W. Parton, and carried una mously.

In the afternoon several of the delegates visited Northern Breeding Station at Rease Heath.

In the evening a very successful meeting was held Crewe, the chair being taken by Mr. McCracken, Ch man of the Agricultural Committee The speak were Mr. A. H. Brownson, who spoke on the Exh tion Side in Relation to the Industry. Mr. Brown was called on at the last moment to take the place Mr. Clem Watson, who was unavoidably absent. Ot speakers were Mr. Tom Newman, "The Utility S of Poultry Husbandry"; Mr. Street-Porter. "Poul and Agriculture." Mr. Brown also reviewed the p in a most interesting manner, and spoke very hopefu of the future. Principal Mercer proposed a hea vote of thanks to the speakers, which was carr amidst applause.

What our Readers think of "Eggs."

Lewidden Poultry Farm, St. Ervan, St. Issey.
27th January, 1925.

21, Arthurdon Road, Brockley, S.E.4.

Dear Sir,—You may be interested to know that I have saken all other poultry journals, and cleave only unto "Eg I share the just appreciation of your other correspondents.

Yours faithfully,
(Signed) R. E. HOO

Chesterton Hall, Cambridge.
24th February, 192

Dear Sir,—Thank you so very much for your most kind le of advice. I shall at once act on it. I never expected a le back, but thought in the far future I might see a reply "Eggs." It is wonderful to feel that in a real emergency could get such help.

Gratefully yours,
(Signed) (Mrs.) MABEL PIERC

Windsor, Kelly Bray, Callington, Cornwall.
1st January, 1925.

Dear Sir,—"Eggs" has been a real help to me. It is best Poultry paper I have ever read, especially for the pe which is trying to earn a living by poultry.

Yours truly,
(Signed) JAS. WILLIAM

9, Rockvad Terrace, Dumbarton.

Dear Sirs,—Please find enclosed P.O. for 1s. 3d., being p of the book "One-Man Poultry Farming." I must mention writing, my appreciation of your paper, "Eggs." I thin has no equal in poultry journalism. Hoping you can su book, and wishing you every success.

I am, Sir, yours truly,
(Signed) H. P. REYNOLD

"Ashmead," Garstang, near Preston.

Dear Sir,—I would like to add my appreciation of efforts in making "Eggs" so useful and interesting to poul keepers. I look forward each week to receiving my copy, am always sure to find something new and helpful to me. have long ago ceased to take other poultry papers, as I that the help one gets from "Eggs" is far more reliable. wish you, "Eggs" and the S.P.B.A., a very prosperous Year.

Yours sincerely,
(Signed) W. R. LORD.

Market Report.

INISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, 17th APRIL, 1925.

GRAIN AND FEEDING STUFFS.—English wheat is in fair ply, and, with a slightly improved demand, prices have anced at London and Hull, the average quotation now being 3d. per cwt., as compared with 12s. 1d. a week ago. Imted wheats are also in better request at higher prices, the eases over the week ranging from 3d. to 1s. 1d. per cwt. ish barley is in slow demand at about recent quotations, and erted grinding sorts generally make late rates, while prices London and Bristol have advanced slightly for some descrips. English oats mostly sell at recent values, but white oats, ng to scarcity and a better demand, are dearer at Bristol Hull. Imported oats record little change, but prices have ightly firmer tendency. Maize is in slow demand, and values e declined at Hull and Liverpool.

ffals are practically unchanged in price, but bran at don, with only moderate supplies available, is 2s. 6d. per ton er, while broad bran at Hull has declined 5s. per ton. Meals t a quiet trade and barley meal is cheaper at Bristol, while t meals are reduced in price at Hull. Oil cakes are in slow and at unchanged prices, except at Liverpool, where values fallen 2s. 6d. to 5s. per ton.

ILLERS' OFFALS.—Bran (British): Bristol, £7 15s; Hull, 2s; Liverpool, £8; London, £7 5s. Broad Bran: Hull, £9 2s; ion, £8 15s. Middlings—Fine (Imported): London, £9; Coarse ish): Bristol, £8 10s; Hull, £8 5s; Liverpool, £8; London, s. Pollards (Imported): Bristol, £6 15s; Hull, £6 15s; Lon- £7 2s. Rice Bran: Liverpool, £7 15s. MEAL.—Barley Meal: tol, £11 5s; Hull, £11 5s; London, £11 12s. Maize Meal: tol, £10 17s; Hull, £10 8s; Liverpool, £10 2s; London, £10 10s. e Meal (S. African): Bristol, £10 5s; Hull, £9 10s; Liverpool, s. Maize Germ Meal: Bristol, £10 10s; Hull, £9 10s; London, Maize Gluten Feed: London, £10 5s. Locust Bean Meal: ol, £9 10s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Meal: Bristol, £13 15s; Hull, £11 8s; London, £13. Fish : Bristol, £21; Hull, £20; Liverpool, £19; London, £20 10s.

EGGS AND DEAD POULTRY.

ritish eggs have met an improved inquiry both before and the holidays, and higher prices have been paid in some nces owing to a temporary shortage. Imported eggs ex- nce a fair trade, but some continental descriptions have l to maintain last week's prices. There is not much inquiry lead poultry, although recent prices are generally held ll classes.

eek-end Prices—Eggs (per 120): British, 13s 3d, 12s 3d; Irish, l, 12s 6d; Danish, 14s 6d, 14s 3d; Dutch, 14s 0d, 13s 9d; Italian, d, 12s 6d; Belgian, 13s 3d, 13s 0d; Egyptian, 9s 6d, 9s 3d; an, 12s 0d, 11s 6d; Lithuanian, 12s 0d.

ead Poultry (per lb.): Fowls—Surrey, 2s 3d, 1s 9d; Irish, 1s 2d; Others, 1s 10d ,1s 5d. Ducks, 2s 2d, 1s 4d. Geese, 1s 0d. Turkeys, 1s 6d, 1s 2d.

EGGS.

r Doz.—Ashford: First, 1s 3½d; Second, 1s 2d. Birmingham: 1s 3d; Second, 1s 2½d. Bridgwater: First, 1s 4d; Second, Chelmsford: First, 1s 4½d; Second, 1s 3d. Doncaster: First, Dorchester: First, 1s 2d; Second, 1s 1½d. Exeter: First, Hereford: First, 1s 2d; Second, 1s 1d. King's Lynn: First, Llandilo: First, 1s 0d. Mold: First, 1s 0d; Second, 10d. ort (Mon.): First, 1s 3d; Second, 1s 2d. Norwich: First, Oswestry: First, 1s 1d. Penzance: First, 1s 1d; Second, St. Ives (Hunts): First, 1s 1½d; Second, 1s 0d. Salisbury: 1s 2d; Second, 1s 1d. Skipton: First, 1s 2d. Truro: First, Second, 1s 0d. *Carlisle: First, 1s 4d. *Derby: First, 1s 3d. ich: First, 1s 3d. *Lincoln: First, 1s 3d. *Shrewsbury: 1s 2d; Second, 1s 0d. *York: First, 1s 5d; Second, 1s 4d.

FOWLS.

r lb.—Birmingham: First, 1s 7d; Second, 10d. Exeter: First, Hereford: First, 1s 8d. Llandilo: First, 2s 4d; Second, Newport (Mon.): First, 1s 9d; Second, 1s 4d. Truro: First, *Derby: First, †5s 9d; Second, †4s 0d. *Ipswich: First, *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: 1s 6d; Second, 1s 4d. *York: First, †6s 3d; Second, †5s 0d.

DUCKS.

lb.—Exeter: First, 1s 6d. Llandilo: First, 2s 4d; Second,

t these markets the prices quoted are for sales by pro- direct to consumers. At other markets prices are those o producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, April 22nd, 1925.

CONTENTS.

S.P.B.A. 255
ANSWERS TO QUERIES 257
POST-MORTEMS 259
POULTRY FOODS 259
LAINDON LAYING TEST 261
ANGORA RABBIT WOOL FARMING 262
CORRESPONDENCE 263
HOUSING 265
EDITORIAL—NATIONAL POULTRY COUNCIL ... 267
MARKET REPORT 271

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to their poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bo'd headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS, per line, extra 9d.
DAY-OLD CHICKS, „ „ 1s.
DAY-OLD CHICKS „ „ 1/6

The number of letters, punctuations and spaces between words should be totalled, when the following table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount, will not be inserted.

Advertisements must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the csae of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d.. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office

FIRST POST FRIDAYS

for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY, and TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. **BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS,** for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent, and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

EGGS.

FOR SALE.

Eggs for Sitting, 7s. 6d. per dozen, Miller-Outhwaite strain.—Apply, Miss Butler, Ramsden House, Charlbury, Oxon.

Hobson's Prize Utility Minorcas, the champion laying strain. Eggs, 10s. 6d., 15. H. Hobson, Wrentnall House, Pulverbatch, Shrewsbury.

Do you feed your chicks for eggs?

Give them a chance—Ful-O-Pep will improve the laying powers of even a fully matured hen—but for best results start to feed for eggs from babyhood.

A chick only requires 12½-lbs. of Ful-O-Pep Growing Mash for the first six months of its life. This matures it and makes it ready to lay and pay.

Every particle of required nourishment is contained in Ful-O-Pep Growing Mash. Fowls' egg-making organs are all developed to the highest degree of prolificacy the Ful-O-Pep way, which FEEDS and does not force.

Ful-O-Pep fed chicks when mature lay far more and better eggs than chicks fed on any other plan, because of their greater development and superb health.

For complete information on this most vital subject, write for your free copy of the Ful-O-Pep Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

FUL
TRADE -O- MARK
PEP
GROWING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE

The Ful-O-Pep Guide has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Ful-O-Pep Poultry Feeds are made and guaranteed by Quaker Oats Ltd., 11, Finsbury Square, London, E.C.2.

EGGS.

FOR SALE.

Large Brown Eggs for hatching, e
tion and Utility Barnevelders; 6s. 6d
6d., 20s. dozen; u.r.—Sydney Hiller. Sta
Herts.

Barnevelder, Middleman-Brienen sta
prize-winning; big brown 250-egg st
10s. 6d., replacements.—Lonnen, St.
Dorset.

Eggs for Sitting. R.I.R.'s, from se
stock; 10s. and 8s. Also Sittings, K
Campbell Ducks; 8s.—Mrs. Muirhead
ner, S.P.B.A., Gazeley Poultry Farm,
Newmarket.

Barnevelder Eggs (Baroness Bri
from 7s. 6d. dozen. White Wyan
(Cam-Barron), from 6s.—Mrs. Staff,
Manor House, Burston, Diss, Norfol

Eggs for Hatching, 5s. doz., carriage
Champion Utility White Wyandottes
Special h.c., Appleby; White Leg
Adams-Linkie's; dam's record 280.
Leghorns, 292. Instant despatch.
Graham, Dufton, Westmoreland.

Harry Watkinson offers Eggs, l
and Exhibition combined, 2½ oz., 240 s
s.c. Ancona Specialist for 15 years;
dozen, or 15, carriage paid. — 203,
Road, Westhoughton, near Bolton.

Large Egg Strain. White Wyan
White Leghorns, R.I.R., Light
White Runner Ducks. Eggs from
doz.; carriage paid.—Chas. Ho
"Brookvale," Glenavon Road,
Hill, Birmingham.

Naked Neck Eggs, sittings, 7s. 6d.
—F. Mortimore, 25, Grasville Road
kenhead.

Handsome Blue Laced Andal
Black Minorcas and Brown Leghor
6d. sitting, replaced. Inspection in
Speed, Fiskerton, Lincoln.

Exhibition Black Orpington Egg
Shanks; £3 3s. sitting; 15s. dozen
placed. R.I. Reds (Rogers), 10s.; free
—Tyson, Heswall, Cheshire.

L. SUSSEX—R.I.R.'s,
Falkenstein strain. Having mo
than we require, we are able to
few Sittings of the above famous st
the moderate price of 10s. 6d. per 15.
Estate Office, Babraham, Cambs.

THE BEST EXCHEQUERS Pro
Chicks, from Miller's Best Ex
direct; 15s. dozen; Miller's Extra
direct, 10s. dozen. Live delivery. C
paid.—John Pighills, S.P.B.A.,
Poultry Farm, Cononley, Keighley.

BARNEVELDER 2½oz. EG
Imported Stock x Rayner's Cocke
6d. sitting; paid.—Jamieson, W
Farm, Newick, Sussex.

SITTINGS AT REDUCED PR
Snowden Leghorns; Phillips S
Full particulars and illustrated ca
free.—Barrowmore, 4, Gt. Barrow,

NATIONAL TEST.
Roland Garrett holds second p
four winter months. Only 17 seco
eggs. Black Leghorn: Sittings, 7s
12s. 6d. Repeat orders received ye
year.—Lea Poultry Farm, Wheathar
Hertfordshire.

ALEX. J. BELL, M.S.P.B.A.,
Longwick, Princes Risborough, Buc
Eggs from 10s. 6d., carriage paid
Reds, White Leghorns, Khaki-Camp
Runner Ducks; list free. Satisfa
sisted on.

FINAL REDUCTIO
Pedigree Trap-nested Buff Orpingto
Wyandotte, White Leghorn, Fa
Runner Ducks.
EGGS 5/- DOZEN.
—Colonel Sandbach, Caerllo, Aber
Wales.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, APRIL 29th, 1925.

Editorial.

LINE-BREEDING AND EGG PRODUCTION.

We have read, with much interest, an article on ne-Breeding by Mr. G. H. Ambler, which appears the January issue of the "New Zealand Poultry urnal." Many of our readers will remember th pleasure meeting the Editor, Mr. J. B. errett, who, with Mrs. Merrett, visited this untry last year.

Mr. G. H. Ambler is a great authority on Line-eeding. To some extent we agree with what he ys, but, as far as it is concerned with egg oduction, we differ from him very materially. believes that the wonderful development of the n's productive powers is due "essentially to a ocess of line-breeding"; we, on the contrary, lieve this to be a very mistaken idea, and so from favouring it we are wholly opposed to it, reasons which we shall presently give. We e the following from Mr. Ambler's article :—

> "In his opinion, a study of the rudiments of in-breeding was a most essential feature of a poultry-keeper's education, without which success would be less permanent. Scientists have demonstrated through experiments, from Aristotle's time to ours, that there exist natural laws, which they have recorded and handed down to us as principles of breeding, which must be observed if we would succeed in establishing our ideals. The first law to attract attention was "when inclinations are opposite, the inclinations of the offspring will be weakened, but if alike they will be strengthened." In a practical application of this law we find the production of a bird which will lay more eggs than her ancestors is only accomplished through mating heavy layers to the sons of heavy layers."

his, in itself, is no argument for line-breeding; can hardly accept this "law," it is too itrary, for we know "inclinations" in the pro-y of such parents are determined to a very at extent from which parent the individual will erit—which is prepotent. The old idea seemed e what we call "dilution," and it is apparently one on which Mr. Ambler bases his argument. actual practice we find that individuals in the progeny of strong and weak parents may be actually stronger than the stronger parent or weaker than the weaker, and we have always to consider environment. It is not quite correct to say that the production of a bird which will lay more eggs than her ancestors is accomplished by the mating of heavy layers to the sons of heavy layers. A comparatively poor producer will sometimes produce individuals better than her mate's dam, and of course many as poor as herself, while there will be intermediates; all this will depend on the degree in which the progeny will inherit the physical constitution of the dam or sire.

It is in the assertion that the hen's productive powers had been essentially developed by a process of line-breeding that we most emphatically disagree with Mr. Ambler. We assert, on the contrary, that line-breeding had nothing to do with it, and that as far as egg production itself is concerned, we should have been no worse off, and probably considerably better, if this system of breeding had not be employed.

The development of a hen's productive powers is due entirely to selective breeding for a specific character; it could never have been attained by line-breeding—that is to say, the restriction of the mating to one single line of descent.

Line-breeding in itself does not tend to breed improvement—that is to say, the breeding from related stock does not do so. It is essential for success in this system of breeding that the foundation should be laid with the **exceptional individual. It is continuous selection of the exceptional individual which leads to breed improvement, not the restriction of the mating to one single line of descent.**

The object of line-breeding, as so often stated before, is to prevent the introduction of characters which are not those for which selection has been made, and which may be dominant to them. But where selection has been made in two different strains for the same specific purpose, the same characters will be dominant in each strain, and, therefore, when these strains are crossed, there will be no more variation than with line-bred birds, and not one-tenth of the risk. All that the breeder has to do is to satisfy himself as to the history of the stock. We are only referring here to production. Let us take the following example :—

Ten hens with pullet year records of 180-220 eggs. Maturity (Date of First Egg), 180-210 days. Winter record (S.P.B.A.), 40-50 eggs. Autumn records (August-Mid-Sept.), 18 eggs or more. Non-broody. Size of egg, 2⅛ ozs. (average). Male's Dam :—Pullet year record, 240 eggs or more. Winter record (S.P.B.A.), not less than 50 eggs. Maturity (Date of First Egg), not less than 180 days. Autumn record (August-Mid-Sept.), not less than 20 eggs. Non-broody. Size of Egg, 2¼ ozs. (average).

The date of maturity refers to Light Breeds only.

Now if selection is based on these lines, what is the object in line-breeding with its attendant risks? and what is the objection to crossing strains? Selection being on the same lines in each case, the characters desired are dominant in each; there can be no more variation when the strains are crossed than there would be in line-breeding. Therefore we say, there is no argument for line-breeding as far as egg production is concerned. It is not suggested that line-bred strains may not give satisfactory results, but that it is due to selective breeding, and that the breeding in line has nothing to do with it.

In the Laying Trials conducted by the Government of Northern Ireland, the highest record ever made in Great Britain or any other country for White Wyandottes was made by six pullets which laid 1,492 eggs in 48 weeks. This was made by a station-holder's pen. The Light Breed section was also won by a station-holder with 1,343 eggs for six pullets in the 48 weeks. In neither case were these pens line-bred, or even related stock. The following is an extract from the report of this competition :—

> "It is a point of special interest that the winning pens in all three sections belong to egg station-holders, were hatched and reared in ordinary mixed farms, and were bred from unrelated stock."

Now to come to Mr. Ambler's question :—

> "It was usually admitted that line-breeding succeeded in the hands of the fancier ; therefore, if it secured and fixed certain physical breed points, why should it not just as easily determine the high-fecund faculty which is just as much a physical feature as are the combs, lobes and feathers"?

We must repeat, line-breeding did not secure these physical breed points ; it was selection that did it. Far too much is credited to line-breeding when success is attained. The most it can do is to prevent the introduction of undesirable characters—nothing more—the improvement which follows when this system is practised by a skilled breeder is, as we said before, due to the fact that there is continuous selection of the exceptional individual ; failure is certain if there is not individual selection, and it is this selection which makes improvement.

There is no analogy between the points aimed at by the fancier and those which are the objective of the utilitarian. The former sacrifices the economic qualities of the birds for his hobby Size he obtains by breeding from the pullets which have been the slowest to mature (lay their firs egg); feather by selection, and production is opposed to wealth of feather ; colour by the rejection of any but those suited to his purpose and so on, but not once does he select for any factor which imposes the least strain on the hen's constitution.

Breeding for high production is opposed to size it is opposed to wealth of feather, and for economical reasons it is not possible to breed for colour as the fancier does, that would mean the rejection of too many highly productive birds. As Mr. Ambler justly points out, line-breeding intensifies not only the strong, but the weak points and it is for this very reason that it is inadvisable to practice it when egg production is the goal For selection for high fecundity tends to lack of size, to an early maturity which so often leads to disaster, to the intensification of other weaknesses which are inseparable when selection is made for this specific factor.

We say most emphatically that, where heavy egg production is the objective, the wider the mating the better, **always provided the history of the individual is known.**

Mr. Ambler quotes Plato to support his case :—

> "Good parents always generate better offspring, useful parents even more so."

But "good" parents are not necessarily good because they are of the same line of descent, neither are they necessarily bad because they are of different lines.

Neither is it possible to agree with Mr. Ambler when he says that :—

> "When in-breeding poultry, they were following Nature's law."

It is not a law of Nature, but an accident. The survival of the fittest is Nature's law ; but for this species would be wiped out because of in-breeding. What evidence can Mr. Ambler produce that in-breeding has led to improvement in wild animals or birds? Is there any evidence that the sparrow is an improvement on the sparrow of 2,000 years ago? It seems to us that in the fact there is so much in-breeding amongst animals and birds in their wild state that we have the best argument against it.

Line-breeding, if it is followed by those intent on high fecundity, cannot possibly succeed unless a very large number of valuable individuals are rejected, which would be unnecessary if wide matings are resorted to. Therefore it cannot be regarded as an economical proposition. The same results can be obtained with wide matings if the trap-nest records are obtainable on both sides, and there is not one-tenth of the risk. Most, if not the whole, of the arguments in favour of line-breeding have been demolished since the discovery of Mendel's law.

Answers to Queries.

By the EDITOR.

DUCKS.

ev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

BODIES " for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

odies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

eaders are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

eplies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (**NOT from Major Saunders**).

LL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

H. H. N. (Sible Hedingham) sends sample of iddlings at 9s. 3d. per cwt., obtainable locally. his is above the average quality, but still it ontains quite a fair percentage of bran. He also ncloses a sample of bran at 8s. 9d. This has een passed through the rollers twice, but in other espects is good value. He also asks for a formula make up for a fattening mash for trough feedg, from the flour sifted from kibbled wheat and aize, barley meal, Sussex ground oats and arps. A good formula would be: One part of e flour, one ground oats, one barley meal, half aize meal, and two of sharps. It would be much etter if these could be mixed with sour milk, but iling that it should be scalded and a half part eat meal mixed with it.

" Worried " (Wokingham). If readers who have ck stock would only realise the necessity of dealg with the matter immediately, we might be able help them. Now all I have is a letter from Worried " (Wokingham), who wants to know hat is wrong with some of his fowls. They have a hitish speck on the bottom of the mouth one side, out the size of a pinhead, the speck comes away a little core—some specks as big as a pea. One s the side of the face swollen a little, and the range thing is all are laying, bright and active pearance, good appetite, no running at the eyes nose, no sneezing or coughing, no inflammation und the specks. " Worried " wants to know hat is the cause, and how to prevent in future, so how to treat it. At present he is giving roup wder in the dry mash, sulphate of copper in the drinking water, and Condy's Fluid at night. Of course, he will understand the importance of isolating the diseased birds. Common salt, two drams, dissolved in a quart of warm water, and the spots brushed with this until they are disintegrated, and loosened is a useful treatment. At the same time he should supply plenty of fresh green food, continue the sulphate of copper in the drinking water, and give flowers of sulphur at the rate of half pound per 100 birds, in the mash every other day. Care should be taken to keep the drinking vessels and feeding troughs thoroughly disinfected.

" Anxious " (Clanfield) has an old piece of ground 50 feet by 100 yards, which has been entirely neglected for about eight years. In consequence it is covered with coarse grass, with the new young grass growing sparsely, and a few patches of dandelion and clover. He had made up his mind that the piece of land would be useless for poultry. As it is surrounded on all sides it is impossible to get a horse and plough in, and he cannot get a man to scythe it. What I imagine has occurred is that he has a lot of couch grass. He wants to know whether, in view of what has been said as to the value of poultry to old pastures, in tearing up the coarse grass, he could put fowls on the land, after all, providing they were well fed and supplied with green stuff so that they did not eat the old grass. Certainly fowls could be put on the land. I do not think they are likely to eat the old grass, although occasionally an odd bird or two will do so. From his description, however, it is pretty evident that the birds are not likely to improve the grass as he hopes they will. It is in too rough a condition for that, still the ground could be used with success and the fowls would improve it to some extent.

C. B. (Burnley) writes that he cannot agree with me on the question of line-breeding. All our best laying strains, he says, are line-bred, and line-bred birds are more prepotent than those which are not. I must refer him to this week's Editorial, which will answer his contention, I think, the one exception being what he has to say in reference to line-bred birds being more prepotent than those which are not. May I point out to him that they are prepotent only for those characters which have become dominant by selection, and not because they are line-bred. In reply to his second question, I do not think that Felch's chart is of great value to poultry breeders, and as he asks me to give reason for my answer it is this : It involves two forms of in-breeding, the dam to her sons, and the sire to his daughters. The degree of relationship is not a safe guide as to what a mating should be. Brother and sister, if really superior individuals, may be a good mating ; two cousins, either with any weakness, may prove disastrous. We cannot safely judge by externals whether a mating is a sound one or not ; generally the first indication that anything is wrong is infertility. The chart merely indicates the relationship, it cannot tell the breeder whether the individuals used are superior or inferior. If he fails, he thinks he has gone " too close " ; in reality he has mated individuals which are inferior, and the close-breeding has intensified the weakness.

D. M. B. (Bristol) has had a disastrous hatch, a very high percentage of dead-in-shell. I have examined the twelve eggs he sent me, and each a well-developed chick. The membrane was moist, and there was no indication that there was insufficient moisture except the extreme hardness of the shell, and this, in my opinion, was the cause of the failure to hatch. The eggs were Wyandotte x R.I. Red. In the next hatch, "D.M.B.," it would be advisable to give moisture from the first, there is little fear of your giving an excess if you are careful to see that the machine is well ventilated. I should certainly not think that the stock birds were at fault in this case.

F. L. (Birkenhead) complains that his pullets are laying badly, eggs are small, and the birds are out of condition. There are 20 of them in a house 10 x 8, which is well lighted, kept scrupulously clean, and they have a run 40 yards by 20. Grit and oyster shell are supplied, and the feeding is clover meal and bran 1½ lbs. each, thirds 3 lbs., biscuit meal 1 lb., and meat meal ½ lb. This is scalded overnight, part of the thirds being reserved to dry it off to a nice crumbly condition. The grain feed is equal parts kibbled maize, oats and wheat, 2 ozs. per bird. I think we need not go farther than the feeding to look for the trouble. There is far too much bulk in the mash, and the following alterations should effect a speedy improvement:—Reduce the clover and bran to 1 lb. each, do not scald the latter, but use it to dry off the other ingredients with. Increase the thirds to 4 lbs., and be sure they are of good quality, not ground over bran ; add 1 lb. of maize meal and another ½ lb. of meat meal. You would be wise to be satisfied as to the quality of the clover meal, "F.L.," see that there is plenty of leaf, and not a lot of stalk, and be sure you are feeding good oats.

[illegible] writes to say that one of her [illegible] pullets laid a 3½ oz. egg this week, [illegible] asks if this is a record. She adds: "You will be interested to hear that we have had a very large number of double-yolked eggs, and our only trouble is that eggs are very thin-shelled, although we give plenty of oyster shell. We are only beginners and very enthusiastic. We should be glad if you could tell us a cheaper method of feeding. At present we are giving a wet mash of bran one part, sharps three, biscuit meal 1½, meat meal 1 lb. We were told to give 2½ ozs. of this, weighed dry. At present our feeding costs us fourpence per head per week, and with eggs at 1s. 4d. per dozen this does not leave much profit, although we are very careful and nothing is wasted. Our birds are Black Leghorns, but we have been told that Whites are much better layers. Do you advise us to make a change?"—I hope I shall not damp your enthusiasm, "Oxonian," when I tell you that the egg, although a very large one, is by no means a record. Only a few weeks ago I had one sent me weighing 5 ozs., which contained a completely shelled egg inside. It is important, too, that you should change your feeding apart from the cost, for these double-yolked eggs are by no means to be encouraged, they are due to the feeding being of too stimulating a nature, and the same remark applies to the thin shells. You can't make a profit if your feeding costs fourpence per head per week. Now try the following mash :—Bran 1 lb., sharps 4 lbs., ground oats 1 lb., maize meal 1 lb., meat and bone meal ¾ lb. This will be much cheaper than the formula you are using, and it is not so stimulating. At present I would not give more than two ounces of this mash weighed dry, and two ounces of grain, equal parts oats and wheat. This only applies to your particular case, and for the present time, if you continue as you are doing, your pullets will suffer from ovarian trouble, which would cause considerable loss. Yes, if you become a member of the S.P.B.A. you are entitled to advice by post at any time. You need not be a pedigree breeder to become a member. I would not change the breed. White Leghorns will not be better than the Blacks.

Puzzled (E. Yorks) has had a disappointing hatching season, and thinks that it would be well if we were to have little more light on the subject of incubation in these columns. He has been bothered by the moist conditions in which the chicks hatch and unabsorbed yolk with many of them. "Puzzled" does not go into details, so I cannot help him much. The condition he describes, however, indicates that an excessive amount of moisture has been used in a badly ventilated incubator. I do not know that we can throw much more light on the subject in these columns, but I propose shortly to relate my experiences with the hundreds of unhatched and unhatchable eggs which have been sent me, and the conclusions at which I have arrived. The sample of ground oats sent is of good value, although a little coarsely ground.

Red Hen (Loughborough) is having serious losses with chicks, and sends the following details:—"They mope, wings droop, there is diarrhoea in some cases but not in all, they were doing well up to the time they were six weeks old, now I find two or three dead daily, and shall be glad of your advice."—This is a case in which it is almost impossible to help, and no address was given. The writer says they mope and their wing droop, and, as most of my readers tell me this when describing their sick birds, may I gently suggest that I have never yet seen a sick chick which appeared at all cheerful; they always mope. and their wings always droop. In this case I am inclined to think that the trouble is connected with the feeding although I have nothing to go on. "Red Hen" should examine his feed, and send some chicks for post-mortem.

J. G. E. (Birdwell) sends a sample of chick feed which he is using as the first feed this season, and asks for report to be forwarded. We cannot forward reports on foods, etc., to any but members of the S.P.B.A. by post, unless a fee of 2s. 6d. is paid. The sample is a fairly satisfactory one. The only ingredients to which objection can be taken is the millet, but this is in a very small proportion.

D. D. (St. Ives) writes to say that she is taking a farm in Sussex. The man who has it at present has only a very small stock, and she wishes to know whether she could take her own birds, and if it would be difficult. No, certainly it would not be difficult; but I cannot give her any idea as to what it would cost. The railway authorities would be able to tell her far better than I can, and whether they would get there n one day or not. As the weather is likely to be hot, the best way would be to pack them in open crates. I do not know anyone who hires crates, neither can I tell her how many would be required, unless she lets me know exactly what she is taking. I cannot express any opinion on the proprietary feed which she is using for raising her chicks. The railway authorities would be in a far better position to tell her as to the cost of removal, etc., than I can.

A. R. D. (Sunderland) begins by writing in the most appreciative terms of "Eggs," and then goes on o state that his poultry can only be kept in a backyard, and they have to be kept intensively. He has a well-made house and run, which is bone dry, and yet ives the maximum amount of exercise and light. The onditions, then, we can assume are all that is desired. Not being able to get certain ingredients, he proposes to make up a mash for his chicken food s follows:—Middlings, 4lbs.; Maize Meal, 2lbs.; Ground Oats, 1lb.; Cerema Yeast, ½lb.; Linseed Meal, lb.; and a well-known Chicken Meal, 3½lbs.; 14lbs. f best Broad Bran, and 3½lbs. of Alfalfa Meal. In onjunction with the above he is going to use a very xpensive dry chick feed, and he wishes to know if think this will be satisfactory. Well now, let us onsider. We have in this chicken meal itself a very xpensive food, one of excellent quality; what then s the object in mixing it with other ingredients in he mash, as in itself it is a complete meal? It all eems so much waste. I would omit this chicken meal, and would suggest to my correspondent that he replaces it with one measure of good meat and bone meal, adds another 1lb. of ground oats, and adds to it lbs. of best broad bran and 1lb. of alfalfa meal. The ry chick feed is made up to my formula, but is very ear. The other proprietary mash to which he refers, s, in my opinion, too stimulating, and if he feeds on he lines suggested above, he should get good results.

"Starter" (Totton) wishes to know how to be able to tell a good sample of oats, maize, sharps, bran, fish meal, maize meal, and Sussex ground oats. With regard to oats, the best guide is the weight. They should not be under 40lbs. to the bushel, the hull should be thin, and the oat plump and short. There is not much difficulty in telling good quality maize—whole or kibbled. Kibbled should not contain a lot of the meal and offal, but should be clean cut. Maize meal often contains a good deal of the offal, and is frequently too coarsely ground. Sharps—These vary very greatly, from a low-grade flour to a fine bran. The poultry-keeper wants neither the one nor the other. Sharps should be floury, and as free as possible from bran, but there are always particles of bran in them. They should be fairly white in colour. Bran should be soft, and not rough to the touch, and when the hand is plunged into a bag some flour should adhere to it. Fish meal should be dry, and should be bought with a guarantee that it does not contain more than four per cent. salt or oil. Excess of oil could be determined by placing the sample on a sheet of notepaper. If this becomes greasy there is an excess of oil. Sussex ground oats should be a light creamy colour, free from husk, not gritty to the touch, and almost of the consistency of flour. In answer to "Starter's" second question—the formulas for dry mash should be always before the birds, and the quantity of grain should be approximately two ounces per day per bird, but he must learn to feed by observation and not by weight. In the short winter days it is a far better plan to give the birds as much grain as they will eat for the last feed, preferably of kibbled maize. A hen should be fed according to her production, and one which is producing heavily will of necessity require much more food than one which is not laying.

"Paddy" (Irby) sends samples of Sussex Ground Oats at 17s. per cwt. These are not "Sussex Ground," and I do not call them particularly good value at the money, as they contain a good deal of the husk. The fish meal is a very satisfactory sample. The thirds at 9s. 9d. are of good average quality, and the bran at the same price is good value for the money.

POST-MORTEMS.

H. S. Although the only lesions to be discovered were those of pneumonia, I very much suspect that the trouble is B.W.D., especially as one entire hatch died mysteriously. The fact that an intervening hatch escaped, although from the same breeding stock, could be explained by the fact that "carrier" birds do not invariably lay infected eggs, but the number that they do lay in a season has yet to be worked out. I should advise isolating these birds, and disinfecting everything that they have been in contact with before using again for others. Add two per cent. cod liver oil to the mash, as this should improve their resisting powers.

M. B. F. The post-mortem examination of the Light Sussex pullet showed that the liver was in a state of amyloid degeneration, and she was suffering from dropsy in consequence of this. The condition is not contagious, and the cause is not known, but it may be termed the result of a faulty body chemistry whereby the liver cells have become replaced wholly or in part by starchy material (glycoproteid). There is no treatment, and the condition cannot be diagnosed during life. The shaking of the head noticed was most likely due to the pressure of the dropsical transudate exerting pressure on the lungs and interfering with respiration.

M. B. The post-mortem analysis of the bird ed that phosphorus poisoning was the cause. The best antidote for this poison, if given as soon as suspected, is copper sulphate, ten grains dissolved in two or three ounces of water and injected with a syringe directly into the crop, through an india-rubber tube passed down the gullet. No oil of any description should be given, as this dissolves the poison and allows of its absorption.

G. P. The post-mortem on the chicks showed that they were suffering from acute gastritis and digestive disorder. The food found in the gizzards and intestines appeared to be of too coarse a nature for such small birds to digest, and there must have been something of an irritating nature, in addition, to have produced such an intense inflammation of the proventriculus as was present. I can only suggest changing the food to something more suitable, and giving any that show signs of trouble five grains of Bismuth carbonate and a teaspoonful of medicinal paraffin. This should soothe the inflamed surfaces, and at the same time get rid of the offending material.

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES.

The third annual laying competition was held at the Lancashire County Council Farm, Hutton, under the supervision of Mr. C. H. Dobbin, the County Poultry Instructor. Up to the end of last month 56 birds have laid 100 eggs or over.

The weather has been much more satisfactory, and the ground has dried nicely. Several of the birds have died during the month with roup, but the birds now in hospital are improving, only one bird having been brought up recently. R.I.R. No. 81 laid 26 eggs in the 28 days, but unfortunately the eggs were not first-grade Thirteen birds have been broody during the month.

Sixth Month Report—5th March to 1st April, 1925.

The following are the leading positions in each section showing the number of eggs and points for the six months:—

Section 1. White Leghorns, Large Breeders. (Three Birds).—E. Cam, 325, 2070; R. Beesley, 309, 1912; J. Booth, 316, 1873.

Section .2 A.O.V. Light Breeds, Large Breeders. (Three Birds).—O. Rawlinson, 299, 1712; T. W. Gardner, 169, 908; W. Hamnett, (one dead), 155, 897.

Section 3. White Wyandottes, Large Breeders. (Three Birds).—C. Bates, 310, 1983; J. R. Dawson, 310, 1928; P. Williamson, 293, 1910.

Section 4. A.O.V. Heavy Breeds, Large Breeders. (Three Birds). F. Harvey, 286, 1831; A T Walker, 276, 1701; G. Cobham, 310, 1625.

Section 1. Light Breeds, Small Breeders. (Single Birds).—J. Stanley, 107, 706; W. Ashton, 103, 656; F. Wilkinson, 121, 619.

Section 2. Heavy Breeds, Small Breeders. (Single Birds).—J. W. Pearson, 121, 784; H. Harrison, 103, 579; W. R. Robinson, 90, 565.

Coccidiosis.

By **MAJOR C. G. SAUNDERS, D.S.O., M.R.C.V.S.**

Coccidiosis is primarily a disease of the intestinal tract, but it may also invade the liver, kidneys and lungs. Chickens, turkeys, pea fowl, galenas, and pigeons are most subject to it, but aquatic birds and wild ones also suffer. The organism causing coccidiosis is designated Eimeria avium, and belongs to the class of protozean parasites known as sporozoa. The organism belongs to the animal kingdom, as distinct from the bacteria, which are vegetable parasites. Reproduction takes place within the body of the host, the resulting oocyst being passed out with the excreta, to be picked up by another individual, and again cause the disease. The oocyst is extremely resistant to the ordinary destructive influences of drying and sunlight, and may persist for over a year unless artificially destroyed, either by starvation for want of hosts, or by liming and ploughing. Birds of all ages are subject to infection, which depends entirely on the opportunity of obtaining the organisms, but the greatest mortality is in young birds, adults being more resistant, and often being carriers without outward signs. Turkeys are very susceptible, and disastrous losses result among young birds, very often at the time of just "shooting the red." The disease is spread chiefly by the droppings of infected birds contaminating the food, water, and ground, but the organisms are also sometimes included in the egg in utero, and the chicks infected before hatching. The conditions produced by the invasion of the coccidia, are those of inflammation of the organs attacked; in the intestines the first portion or duodenum, becomes congested and inflamed, and this, in very acute cases, is all that can be seen on post-mortem examination; in less acute infections the main lesions are to be found in the caeca, or blind guts, which become filled with concretions of cheese-like consistency, and show patches of ulcerations on their walls. The liver becomes secondarily invaded, and circular areas of a yellow or golden colour are seen throughout its substance. The liver lesions are more generally found in turkeys, and are more typical in nature than in chicken. In the lungs pneumonia is produced with the formation of tubercles, which are difficult to distinguish from those of Aspergillosis and B.W.D.

In aquatic birds, the kidneys seem to be the predilection seat of the organisms, the lesions that they cause being inflammation and tubercle formation. The symptoms are not diagnostic or constant, but the following may occur:—Moping, rapid respirations, diarrhoea, fits, convulsions, ruffled feathers, leg weakness, stupor, staggering gait, reluctance to leave the heat, indifference to food, increased thirst. As to treatment, nothing has yet been found more effectual than catechu, one dram of the powdered drug being dissolved in every three gallons of the drinking water, and the birds allowed no other for a month. To prevent spread, the droppings should be swept up and burned every day, and the *floors* of the houses

(Continued at Foot of Previous Column.)

COCCIDIOSIS—Continued.

and the runs disinfected twice weekly. A useful and inexpensive solution for this purpose is ¼lb. chlorinated lime mixed in one gallon of water, and applied with a watering pot. Before using again for healthy birds, the entire equipment, houses and runs should be thoroughly disinfected. The runs should be turned over and heavily limed, or even in badly-infected premises, left vacant for a year, being in the meanwhile limed, ploughed and cropped.

Modern Poultry Feeding.

By TOM NEWMAN.

PORRIDGE AND RICKETS.

)ne wonders whether Professor Edward Mellanby ılly did say that Oatmeal "Produces Rickets and ; Dour Scots," or whether he even suggested that had "ricket-producing qualities." A cutting has ·n sent me with the startling headline:—

"PERILS IN PORRIDGE."

l it is asserted that shocks await Scots, who read report of Professor Mellanby's experiments re- ng to the effect of cereals producing rickets. One ı only suggest that the person responsible for it ested his porridge a great deal better than he did report.

At least twenty years ago it was known that ›pies became ricketty if fed on meat deprived of its ıc, or rice, or potatoes exclusively. While pigs fed whey, potatoes, maize or cereal grains, suffer from same trouble. Examination of the bones of these mals revealed that the parts, notably at the ends he joints, were composed of soft cartilage, in which c and phosphoric acid were only slightly deposited at is to prevent another astute journalist coming with the sensational headline:—

PERILS IN MEAT, POTATOES, MAIZE AND CEREAL GRAINS."

)ur practical experience has taught us the value of meal, and it is nonsense to talk of its "ricket-pro- ing qualities." Oatmeal does not produce rickets, it is deficient in certain constituents, the absence hich produces a ricketty condition.

f porridge was eaten without milk, and formed a e part of the diet, a ricketty condition would occur, the milk supplies the deficiency in the oatmeal. orses and cattle were fed exclusively on the cereal ns, without hay or other fodder, they would suffer n "osteomalcia," because of a deficiency of the ium salts.

SPRING FEEDING OF THE LAYER.

[any times I have drawn readers' attention to the essity of feeding heavily during the spring and y summer as one method of avoiding an early ılt and maintaining the size of eggs. Particularly e I referred to the advice so often given to dis- inue maize feeding during the summer months, and e endeavoured to show how very mistaken it is. repeat again what has so often been said before, a vy producer draws heavily on her body fat to form of egg. When this is exhausted she ceases to and, getting out of condition, falls into a moult. makes no greater demand on her bodily reserves during the period of natural production. We so much of summer and winter feeding. It is a question of season or temperature—a hen's re- ements should be met according to her yield of eggs—the more she lays the more food she will require. There is a curious idea that maize feeding encourages broodiness. I suppose this arose from another mistaken idea—that a hen's temperature rises when she becomes broody. Nothing of the sort.

A good layer will produce at least 4½ eggs per week from the beginning of March until the end of May—many will produce a larger number than this, and of necessity they require much more food than when they are producing two or three, and spending many inactive hours on the perch.

PRODUCTION AND SHELL MATERIAL.

Eight years ago, writing in the S.P.B.A. Register, I pointed out how necessary shell material was to the laying hen, and showed that when oyster shell was supplied, hens laid 1lb of eggs for every 2lbs. 6ozs. of dry matter they ate. When withheld it required 3lbs. 9ozs. of dry matter to produce the same weight of eggs. The following is taken from the "Poultry Tribune." I do not think that when a really good sample of Limestone Grit is supplied that oyster shell will show better results:—

> "The average hen eats 3½lbs. of shell material per year. That means that a flock of 100 hens eats 350lbs. of shell material, largely oyster shell. This can be used as a basis of comparison for your farm flock. Oyster shell can be a limiting factor in egg production. A hen can produce only as many eggs as she has shell material for. If a hen has 50 yolks and 50 whites, and only 25 shells, she can produce only 25 eggs and the 25 extra yolks and whites will be reabsorbed into the system. Poultrymen used to think that a lack of oyster shell caused hens to lay soft-shelled eggs. Recent experiments show that hens do not lay soft-shelled eggs, due to lack of oyster shell, but rather due to other causes, such as lack of mineral assimilation.

Mineral Tested.	Test 1. eggs.	Test 2. eggs.	Test 3. eggs.
Oyster Shell	884	761	1364
Clam Shell	780	619	1255
CaCo3 K1	622	513	853
Lime Rock and K 1	532	358	714
Pulverised Oyster Shell	487	590	1056
Lime Rock	515	472	846
Dry Bone	450	587	814
Ca Co3	339	493	745
Check (no shell material)	210	388	693
Ca3 (Po12)	—	475	725

> A recent experiment run at the Wisconsin Station, testing various sources of shell material, shows how the absence of shell material can be a limiting factor in egg production. The pen on the best source of shell material, namely oyster shell, laid twice as many eggs as the check pen or the pen without shell material. This experiment also showed another interesting thing in that oyster shell proved to be the most efficient source of shell material. This was the ordinary large-size oyster shell. The pulverised oyster shell does not have a very high rate of efficiency. This would tend to indicate that feed manufacturers who place pulverized oyster shell in commercial feed, are not utilising the best sources of shell material,

(Continued at Foot of Column on Next Page).

Housing.—*Continued.*

By **MARTIN GRAY.**

Now we come to the sides of the house—5ft. and 4ft.—that is, front and back, are suitable for small houses of the lean-to type, which are smaller than 9ft. x 5ft., but for larger houses, especially of the span type, the sides should be 6ft. to the eaves. The great advantages of a high house are that there is plenty of air space, and that there is no liability of bumping one's head when working inside. The ridge of the house should be 9ft. high. I like at least 1½ times the height at the eaves for the ridge height. If it is less than this snow will lodge on the roof, and with its great weight is liable to do much damage.

The roof, of course, should be constructed of wood. A corrugated iron one should on no account be used. It makes the house feel like a furnace in the summer, and like an ice chest in the winter. It has also the great disadvantage of sweating, and making everything below it damp. The bearers for the roof should be of 2in. x 1½in. for small houses, and of 3in. x 1½in. for large ones. The roof should also be supported by cross members every six feet.

The roof will have to be covered if it is intended to keep the rain out. There are various brands of felt on the market, but they eventually divide themselves up into two kinds. One of the types that need to be tarred every year, and second the types that do not. I prefer the latter kind, as they last well, and also save the constant labour needed to tar them. Felt should be fixed lengthways, and not up and down, as some makers recommend. This method ensures the exclusion of the rain. I prefer copper tacks to ordinary ones, or felt nails, except where very heavy felt is being fixed. There is no tendency for the copper tacks to rust like the other two will do. To prevent the wind getting a hold the felt should be fixed down every 18 inches by 2in. x ½in. battens.

If we are to have good results we must have plenty of light, but, on the other hand, we must not go the other extreme, and make the place like a glasshouse. There should be two windows at the front and one at the back for every six feet in length of the house. Two of these windows, one on either side, should be on a level with the floor This obviates the possibility of the birds scraping the litter into heaps on the floor, as they will if the house is unevenly lighted. There should also be a window above the door in houses larger than 12ft. x 9ft. This window and also the top window of the three just mentioned should be of the hoppered type. These windows prevent direct draughts on to the birds, but always ensure a steady flow of fresh air. All the windows mentioned should be of ¼in. rough plate glass, which is very strong. The one above the door should be 1ft. 9in. x 1ft., and the rest should be 2ft. x 1ft. 9in. These windows are not in frames, and thus a great deal of trouble and expense is saved, as good frames are very dear. They rest in galvanised iron or zinc slots to prevent the rain rotting the matchboarding. Zinc is preferable to galvanised iron, as it lasts longer, and is easier to bend to shape.

The door should be of the sliding type—that is pulleys sliding on an iron rail. This type is more pr ferable than the orthodox hinged type. There is chance of it banging if it is opened when such win as we have just had occur. It does not alarm t birds, and it is much appreciated when cleaning out house with the aid of a barrow. If trap-nesting done on a large scale, it is advisable to have a door either end, so as to go straight through the house.

Some means of collecting the manure deposited ov night must be devised. The dropping board or t dropping pit may be used. Both have their adva tages, but I much prefer the former. It ensures getti the manure away immediately, which, I think, is great factor in the prevention of disease. On my ow farm the dropping boards are cleaned daily, but whe this is impracticable they should be done at least twi per week. The dropping boards should be 2ft. 6i wide where two perches are going to lie. They shou be made in six feet lengths, longer than this mak them too unwieldly to move about with ease. Abo the dropping boards we have the perches. They shou be of 3in. x 1½in. material, rounded off on the top t edges. Perches should not be fixed, but should lie sockets in order that they may be creosoted month to keep red mite, etc., in check.

The nests should have no backs, and the botto should be of ½in. mesh wire netting. The latter mak a more sanitary bottom than does wood. The nes should be fixed to the wall by a hook and an ey The hook should be on the wall, and the eye on t nest. This method of fixing is vastly superior to na ing them up, as they can be taken down in a secon The nests are best made in lots of five. This is t most convenient number for handling, and it also su one breeding pen. The most convenient size is 15i x 12in. x 12in. Nests are best made with sloping to to prevent the birds perching thereon. If trap-nes are to be fitted, lids are strongly recommended for t top of the nest in preference to the trap itself bei hinged. If lids are fitted the birds can be remov more easily and without any stooping on the part the operator.

If chicks are to be brooded in the house, and ke there until maturity, there should be hen exits both sides of the house to prevent the ground arou being fouled. In any case, there should be two h exits to every 12ft.

If the house is to last any time, it must be treat in some way. Either tar, paint or creosote or one the advertised preparations may be used. Creosote as good as anything, and is the cheapest. Tar is a to cause dry rot; paint is expensive, and has not t vermin-destroying properties of creosote. If it is i tended to creosote the house, it should be done eve year, in June for preference, when the weather is dry

(The above paper was read before the Gloucest shire Branch of the S.P.B.A. by Mr. Gray).

MODERN POULTRY FEEDING.—Continued

and that egg production from such feed, whe oyster shell is not fed extra. is often limite because of the lack of shell-building material. every case the high-grade coarse oyster shell prov to be the best source of calcium for egg-shell co struction."

Scientific Poultry Breeders' Association.

ull particulars of membership will be sent by return on
pplication to the Secretary, Mr. Tom Newman, The
Beeches, Rudgwick, Sussex.

HE "FEATHERED WORLD" YEAR BOOK.

Ir. S. H. Lewer, in his preface to the "Feathered
rld" Year Book, remarks very justly that for an
ual work of reference to have reached its four-
ıth volume, is *presumably* evidence that it has ful-
d a want, and interested its supporters. That
d "presumably." if he will forgive my saying so,
ery unnecessary. I should have been more definite,
then Mr. Lewer is a modest man.

he 1925 issue has more than maintained the stan-
d of previous years, and that standard has always
n a very high one. As a work of reference it is
aluable. There are 360 pages of literary matter,
every page is of interest. The illustrations are
nerous and excellent. I hate saying things that
er people do, and everyone will say: "No poultry-
per's library will be complete without it." In this
it is so absolutely true that I have no alternative
to endorse it. It should find a place on every
ltry-keeper's bookshelf.

ust to mention a few of the articles. Mr. Lewer
tes, by way of preface: "Some Impressions of
4." I am pleased to see he is still optimistic, and
t both he and Mr. Edward Brown, who writes on
ie Poultry Industry in 1924," have not failed to
ıt out that we are now back to normal times. It is
ct that we are apt to forget, and if we fully recog-
it, it should make us all a little more hopeful.
ultry Feathers, their Importance and Value." We
not attach the importance to feathers they do in
er lands. At the World's Congress the Italian
ıd had an excellent exhibit. In 1922 we imported
8,765 worth, and about £72,599 worth from
and. I wonder what the value of the home pro-
e was. The article on this is interesting and infor-
ive. "Shipping Birds Abroad" gives you valu-
information on this subject. "Uncle Jim Holds
th on Table Poultry" in excellent style. Every-
interested in the subject should read this article.
ow to Start an Up-to-Date Poultry Farm." I don't
e follow Mr. Haigh in all he says. He is a little
finite on stocking. I can't quite see "1,000 stock
5s."; nor housing at £40 per 100; nor Brooder
ıse, Rearing Tackle, and Incubators for £95; but
most thoroughly agree with him when he says:
one can buy a ten acre holding with house and
e buildings for £400 to £500, it cannot be con-
red excessive. "Poultry, Bees, and Fruit as a
fitable Combination" is an interesting article by
e-Jee." Mr. Powell-Owen contributes "Tails: Good
otherwise." His remark that the "faulty tail
vs up like a weed where there is no selection," is
oundly true. Miss N. H. Bell has some pertinent
gs to say on "Utility and Exhibition Standards." Mr. Lowen has an interesting article on "How to Organise a Strain of Layers," but I think he should have advised higher records for his foundation stock than 150 eggs per bird. He is quite right when he says that "freaks are just as dangerous as duds," but his remarks on introducing fresh blood I may venture to say are in need of qualification. Passing on, one comes to review of the breeds and their progress during the year. Every breed is dealt with by some specialist breeder, and for this section alone the book is thoroughly justified. The illustrations are first-class, and the descriptions of the different breeds and varieties cannot fail to interest everybody. Space forbids my writing more. I must refer to some of the articles in another issue. Bantam Fanciers have several pages devoted to their interest, and the pigeon men are well catered for. To sum up: *it is a great book. Get it.*

ASPERGILLOSIS.

Many of you must have been struck when reading the P.-M. reports by the heavy mortality said to be caused by the disease, Aspergillosis. It seems but a few years ago that we became aware of its existence, or, rather, the causation. Now I have a letter from Attleboro', in which the writer says:—

> "I should be much obliged if you can give me something about Aspergillosis in 'Eggs.' Major Saunders, D.S.O., has recently reported this from my chicks after P.-M. The history is as follows: My first hatches, three have done quite well, the rest consisting of 109 were all right at first, but went off badly; there are now 74. It is interesting that of the 109 I put 39 under hens, and they also suffered, so I attribute it to one lot of food. I should much like to know whether it would be better to kill the remaining ones, and how long they must be kept separate."

We have had articles on this subject before; the first appeared eight years ago, and I shall only here give a very short summary.

Causation.—A very common fungus, known as *Aspergillus Fumigatus*, found growing upon dead organic matter of the most varied kinds. The spores of Aspergillus are most frequently introduced with mouldy litter—I think a very common cause of an otubreak is wasteful feeding of grain, particularly chick food, which often lies in damp litter for weeks before it is eaten. Also a great deal of damaged wheat is used in some of the chick foods. The mucus on the surface of the membranes, the serum beneath them, and the temperature of the body are all favourable to its growth. It is believed that outbreaks with brooder chicks may have been caused by eggs which have been exposed to mouldy litter, for the filaments of the fungus are capable of passing through the egg shell.

Symptoms.—The respiratory or digestive organs are attacked, especially in young chicks, producing either whitish or yellowish tubercle like nodules, in the tissues, or large flat elevations of a dirty yellow or greenish colour on the surface of the mucus membranes. The filaments penetrate deeply into the tissues, causing inflammation and swelling, which obstruct respiration, and at the same time they produce a poison which causes general depression and fever. The symptoms in brooder chicks are similar to those of B.W.D.

TREATMENT is very difficult, and is inadvisable. The disease is usually in a very advanced state before symptoms are observed, and the deep-seated position of the parasitic fungus makes it almost impossible. The only thing to do is to take steps to prevent it. Be sure of your chick food. Don't feed damaged grain; keep your litter clean and dry, and remember that outbreaks are most likely to occur in damp situations. The fungus will grow on any substance sufficiently moist, even an old boot. In answer to my correspondent's question, I would kill all chicks which exhibit signs of the disease, as they can never be grown to profitable maturity. I cannot tell him how long they should be kept separate. It would be advisable to isolate them until there are no symptoms.

THE WORLD'S RECORD.

Mr. E. C. B. Boucher asks me to mention in these columns that he has lost that wonderful hen, No. 37, which he believes holds the world's record, and I do not think this will be questioned. She was trapnested from October 9th, 1917, to October 8th, 1924. In that period she laid 1,452 eggs, and was never broody. Her first year's record was 291, in the second 277, third 244, fourth 233, fifth 195, sixth 159, and in her last year she laid 53. One interesting point is her Autumn record. Taking the months, August and September in each year, we find she laid 53, 48, 57, 42, 39, 45. Mr. Boucher must greatly regret such a loss. The Rhode Island Red Club should erect a tablet to her memory.

In the S.P.B.A. Register there is a photograph of Mr. Boucher picking up a bird, with the words underneath: "How to pick up a bird properly." It should really read: "How to begin to pick up a bird properly off the ground.

CURIOUS.

Some few weeks ago a large combination of wealthy firms approached me with the offer of a series of articles on feeding. In their letter they stated they were very anxious to co-operate to promote the progress of the industry. The articles were to be written by experts. They would cost us nothing. The only condition was that a certain article manufactured from by-products of their mills should have prominent mention. I replied to the effect that their best way of showing their zeal for the industry was to subscribe generously to the funds of the National Poultry Council; that our advertisement columns were always open to them, and we had our own experts who could write all the articles we needed, and that we were not disposed to give wealthy firms a free advertisement. In reply to this they kindly suggested that if our experts would write the articles, they were perfectly prepared for to pay for them. Needless to say, this was refused. Now comes the sequel. A few days ago I received a letter from a London Club, in which the writer said he had been invited by a certain firm to write a series of articles on this particular subject, and d ing with this particular commodity, and, *as he had knowledge of it, he would be grateful for any hel could give him.* So much for the experts who going to write these articles, which will no do appear in any paper which is in want of cheap co as information has reached me that the provin press has also been approached.

BRITISH POULTRY INDUSTRY EXHIBIT, WEMBL 1925.

JOINT COMMITTEE OF THE POULTRY CLUB A N.U.P.S.

Mr. CLEM WATSON (Chairman).

Miss N. H. BELL.	Mr. W. POWELL-OWE
Capt. CONYERS LANG.	Mr. Wm. RICE.
Mr. H. A. HUSSEY.	Mr. MARCUS SLADE.
Mr. R. NEWBERY.	Mr. W. VENN CARR.
Mr. T. R. ROBINSON.	Mr. A. P. F. GRANT.

Mrs. H. LOW (Hon. Secretary).

All communications should be addressed to the Hon. Secreta B.P.I.E., 3, Vincent Square, Westminster, S.W.1.

The Committee have appointed Mr. W. A. Turney Manager at Wembley. The well-known firm of Messrs. Osbo and Young, Ltd., will undertake the penning inside pavilion, and the feeding of the poultry exhibits. Inside p are let by the week or for a longer period. Outside runs breeding pens or young stock are also available. The offi opening of the Exhibition is Saturday, May 9th.

YORKSHIRE FEDERATION OF POULTRY SOCIETIES' INTERNATIONAL EGG-LAYING TEST, 1924-25.

Report for the Sixth Month—March 7th to April 3rd, 1925.

The Management Committee reports as follows:—

Egg production during this sixth period has increased rapi the total eggs laid being 11,195, or 19 per bird, one or two p having laid every possible egg during the last four days' col tion, and 30 out of the 81 pens have laid over 100 eggs per p The outstanding pen this month is Mr. Leslie Williams' 53, wh the five birds have laid 26, 23, 22, 22, 25 eggs, a total of 118.

The health of the birds is normal, there being one de during the month. Of the 12 deaths that have occurred dur this first half of the Test, nine have been Light Breeds, a three Heavy. A few other details may be interesting now t we have reached the close of the winter season. The pens birds have averaged 78.13 eggs per bird, while the single bir average is 66.58. The White Leghorns (in pens) have avera two eggs per bird more than any other breed.

There has been a change in position since the third mo of the best Individual Bird in the Test, as Bird No. 562 clai premier place. She has laid 137 eggs in the 24 weeks, and owned by Mrs. Clay. Competitors will now be able to see th positions in regard to all the Silver Trophies at the end of half-year.

The leading pens to date, with their records and positio are as follows (Figures are Eggs and Points respectively):—

Class A. Section 1. White Leghorns.—Mrs. Clay, Long Pr ton, 596, 592; R. H. Fryers, Bradley, Keighley, 559, 557; R. Rodw Nelson, 505, 537.

Class A. Section 2. Black Leghorns.—R. Rodwell, Nels 507, 506; A. White, Malpas, Cheshire, 461, 482; Mrs. Clay, Lo Preston, 429, 452.

Class A. Section 4. White Wyandottes.—Dr. J. E. Helm, N church, in Rossendale, 534, 532; Mrs. Clay, Long Preston, 467, 5 A. Snowdon, Pool, Leeds, 514, 510.

Class A. Section 5. Rhode Island Reds.—Sutton and S Little Hoole, Preston, 463, 505; M. A. Hindmarsh, Skelton, Yo 456, 473; T. Gardner, Garstang, 403, 445.

Class A. Section 6. Any Other Variety (Heavy).—Davey a Son, Sutton, Keighley (L.S.), 555, 590; Wright and Fortune, Keig ley (Buff Rk), 451, 455; W. Hamnett, Blackpool (Buff Rk.), 391, 4

Class C. Section 9. Any Variety Light Breed. Single Bi Section.—Wm. Wharton, Keighley (W.L.), 113, 112; Mrs E. Ka Pool, Leeds (W.L.), 110, 114; R and A. Johnson, Chalford, Glo (W.L.), 107, 111.

Class C. Section 10. Any Variety Heavy Breed. Single Bi Section.—M. E. and A. Robinson, Bawtry (Lt. Sx.), 125, 130; A Sawyer, Crosshills, Keighley (R.I.R.), 113, 126; Mrs. Hawkeswort Pool (W.W.), 117, 127.

Highest Individual Bird Scores for the Month.—H. S Robbi (bird 281), 27 eggs; Mrs. G. M. Barker (bird 465), 26 eggs; All Bros. (Bird 1), 26 eggs; H. S. Robbins (bird 283), 26 eggs; F. Sturdy (Bird 107), 26 eggs; F. S. Sturdy (bird 252), 26 eggs; Les Williams (bird 261), 26 eggs; Lady Seely (bird 341), 25 eggs; M Clay (bird 562), 25 eggs; Mrs. J. Shaw (bird 325), 25 eggs; Snowdon (bird 250), 25 eggs; L. Williams (bird 265), 25 eggs; Sawyer (bird 311), 25 eggs; E. Hodgson (bird 494), 25 eggs; Wrig and Fortune (bird 456), 25 eggs; T. H. Barber and Son (bird 50 25 eggs.

Correspondence.

EGGS BY WEIGHT.

To the Editor of "Eggs."

Dear Sir,—Since writing you on the subject of Eggs by weight" I have lost the market referred), and have taken a step backward perhaps, as y new buyer will not take graded eggs, although think he would be more than willing to buy them y weight, if it were universal, as he says with raded eggs he always gets left with the small ggs. Your correspondent tells us nothing about hat he does with his eggs under $1\frac{3}{4}$ oz. (and I ke it $2\frac{1}{8}$ oz. is a misprint, really meaning $2\frac{1}{2}$ ozs.), d what he does with his $2\frac{3}{4}$ oz. eggs, etc. We l know that we get eggs weighing all the way om $\frac{1}{4}$ oz. to $3\frac{1}{2}$ ozs., and that taking, say, a case eggs, you cannot find only a very few that weigh actly the same weight, so where is grading to op at? and with such variations in weight it is trouble to make up the weight for any quantity. hen he says he is getting a pull over the 2s. 6d. oted in the "Telegraph." I think if he works it t he will find that all his eggs must average ozs. each to make them equal to the Danish lb. eggs. He says: "No messy shop scales" d also "He is handling 6,000 eggs weekly." rely he does not break even six of them while cking? Why should the grocer be less careful ith his own goods? As regards the retailer lopting the selling of eggs by weight, one might well say he would not adopt the weekly half-oliday, or early closing, but he did when the law ade him, and so he would in this case, but only law, which is what I was aiming at. We shall ver get an Act to make everyone, including the ttager, general farmer, etc., grade their gs, even into two grades, much less four, or six, what not, but with all eggs bought and sold by ight, the country higgler must toe the line with e rest, carry his scale (Government tested), even the coalman does, for his 2s. 6d. cwt. goods. e auctioneer will call out 5, 10 or 15 lbs. of eggs, w much, etc., the grocer will put his price at so uch per lb. (showing how cheap a food, eggs at per lb. are to-day, thus advertising our eggs e gratis), the papers will quote them in language derstood by all, at so much per lb., stone or cwt., ichever they like—no more conflicting names to odwink the consumer, such as dozens, scores, eat hundreds, etc., no more unnecessary grading the producers, simply weigh your empty case, it, and weigh again, and there you are, less riations in prices between different parts of the untry, and finally it will give the foreigner a tle more trouble, and also hit him a little, because s shells about three-quarters full will weigh lighter than our new-laid. The consumer will get his eyes opened, and get his full share, and we shall be where we ought to be, on even terms, and perhaps slightly more so.

Where are the oppositions, and who are they among the producers, and what is their objection to the proposal? Are they afraid they will have to sell their hatching eggs by weight, or where is the fly in the ointment?

I hope they will let us have their views, and not be like snakes in the grass.

Yours faithfully,
M.S.P.B.A.

SELLING EGGS BY WEIGHT.

To the Editor of "Eggs."

Dear Sir,—From time to time of late there have been various articles in "Eggs" and other papers re selling of eggs, better style of marketing, etc. For many years past I have advocated some scheme whereby the Government, or some such authority, should establish a minimum price at which no retailer should be allowed to buy eggs, the object of such scheme being to prevent the farmer's wife dumping in her "new-laid" eggs in the spring at a price which is never based on the cost of foodstuffs, necessary to keep up a laying strain from one year to another.

Personally, the farmer's wife does not damage me much, as I get my eggs collected from my doorstep at a minimum of 2d. each, and as soon as my supply is greater than the demand at that price, the eggs go into the preserving pails at once. I consider that any egg producer is a fool to sell eggs at less than 2d. each, and if he or she is one of my pupils I tell him or her so straight.

Preserving costs are a mere bagatelle, and I think that anyone who cannot take the trouble to preserve his eggs when they are not in demand at a reasonable price, should as soon as possible get out of the business, as he is only a nuisance to himself and does damage to hard-working people who have more sense.

Yours truly,
I. H. BURN-MURDOCH.

To the Editor of "Eggs."

Sir,—Much has been written in your paper lately of the various methods by which the lot of the poultry farmer may be ameliorated. Amongst these are Co-operative buying of foodstuffs, Central Establishments for pickling eggs, schemes for a large fattening plant, and so on and so forth.

It appears to me, and perhaps you will correct me if I am wrong, that there are two things that are not done which, were they done, would go far towards the production of a good annual balance sheet. I speak from my own observation, over a considerable area, and my remarks do not refer as a rule to owners of flocks of 1,000 birds and upwards.

There is a failure to realise the value of a really high-class male bird in the breeding pen. Repeatedly, I have urged the purchase of a good sitting, for the purpose of rearing stock birds, but when I suggest £5 or even £3 as the price "I can't afford it" is the cry. The answer is, "Then you can't afford to keep poultry." People come to me and choose cockerels from the forward birds that are about to go to Smithfield, and think they are just the thing to mate up with their best hens—these birds are an absolutely unknown quantity, and the method savours of the "hit or miss" way of poultry-keeping.

(2) Far too long a hatching period. It was long ago impressed on me by Mr. Paynter that one of the prime causes of failure amongst poultry-keepers is that they will not put down an adequate hatching and rearing plant.

To rectify this is much more a matter of capital, than is the case with my first point, I know, but the trouble is that I find so few people hold the erection of an amply adequate hatching and rearing plant as an ideal to strive for. They are **content** to hatch heavy breeds from January to June, year after year.

I hold no brief for the vendors of high-class, highly-priced eggs and stock. I am not one of them, but I believe we owners of small flocks cannot do without them. Seventy-five per cent. of eggs at this season goes some way towards setting off low values and high prices of food. Fifty per cent. hardly does. Anything less spells disaster.

I do not sign my name. It is unknown, and would carry no weight, nor help what I have said.

"SOUTHERN CROSS."

Our correspondent is mistaken in thinking there is a failure to realise the really high-class male in the breeding pen. That has been advocated in "Eggs" ever since the paper was first published, but the value of the stock cockerel is not to be measured by £5 notes.

With regard to the hatching period. That, too, has been pointed out, and on many occasions we have advised our readers that hatching heavy breeds after March, or at least the first week in April, is not a profitable proposition and lighter breeds after the first week in May.—(Editor).

LAYING TEST AND DEAD BIRDS.

To the Editor of "Eggs."

Dear Sir,—In a recent issue of "Eggs" you published a letter, signed "Old Fancier." "Old Fancier" stated that deaths at laying tests should be publicly announced.

My own case is one of this kind.

I enclose two reports from the laying test in question, that you may see for yourself.

My Bresse bird was sent October 11th, and died over eight weeks ago, and, as you will see, is still given in the report as having only laid one egg.

This particular bird laid 16 eggs in as many days before she left here. I most certainly think that in justice to our stock "Old Fancier" was right.

I am sending enclosed, as you remarked that you had no solid evidence of any such case.

I do not mind what use you make of this letter or its contents, if it should further the chances of fair play in these cases.

Yours faithfully,

A. V. LAW.

The test referred to in the above letter is the Clitheroe Test, and the report sent us was that for the Fourth Month, ending February 14th.

One is a little astonished to see what a large number of birds there are which have not yet laid, and also the number which have laid but one or two eggs.

The report is rather scanty, nothing being stated as to the health of the birds, nor any other information which it is customary to receive in a Laying Test report.

LEG WEAKNESS AGAIN.

To the Editor of "Eggs."

Dear Mr. Newman,—There are many supposed causes and remedies for this trouble, but has it occurred to anyone that in many cases, at any rate, leg weakness is nothing more than cramp caused by cold feet, and if the chicks suffering are put in the incubator at a temperature of about 100 degs. for an hour or two they come out all right.

I have never seen this mentioned in "Eggs," will you try it?

Yours faithfully,

W. H. HADEN.

THE EAST ANGLIAN EGG-LAYING TEST.

REPORT OF FIFTH MONTH—From 5th Feb. to 4th March, 1925.

The weather experienced during the fifth month was not conducive to heavy laying, and it says a great deal for the stock in competition that the production again showed an increase of 344 eggs over the previous month.

The total number of eggs recorded was 3,130, which gives an average of 16 eggs per bird over the entire flock.

The number of first-grade eggs recorded rose to 82 per cent.—a satisfactory figure, and one showing an increase of .6 over the fourth month.

The total number of eggs laid to date is 10,848.

Five pens recorded over 100 eggs during the 28 days, the highest number being 106 by Mr. H. Turner's R.I.R.'s.

The highest individual score was 27, by a R.I.R. in Section 4, owned by Mr. T. H. Sochon.

The health of the flock continues to be excellent.

Figures are eggs and points respectively:—

Section 1.—White Leghorns.—Dale Egg Farm, 366, 334; Wheeler, Capt. E. A., 277, 274; Allen Bros., 310, 264.

Section 2.—Any other Non-Sitting Breed.—Cavanagh, Miss E. (An.), 321, 321; Lloyd-George, Maj. (An.), 253, 247; Berry, T. R. (Sicilian F'bds.), 133, 133.

Section 3.—White Wyandottes.—Mullens, Gen. R. L., C.B., 370, 342; Keech, Misses D. & M., 333, 332; Pierce-Grove, Mrs., 311, 311.

Section 4.—Rhode Island Red.—Turner, H., 477, 477; Fearon, E., 415, 297; Gawthropp, A., 290, 281.

Section 5.—Any other Sitting Breed.—Sochon, T. H. (L.S.), 323, 323; Keech, Misses D. & M. (L.S.), 313, 303; Montgomerie, F. D. (Buff Rks.), 93, 93.

Section 6.—Single Bird.—Any Variety Light Breed.—Lane, W. S. (W.L.), 99, 99; Tomlinson, F. C. (W.L.), 90, 90; Fearon, E. (B.L.), 85, 85; Farrant Bros. (W.L.), 77, 77; Abercrombie, Miss P. (W.L.), 76, 76.

Section 7.—Single Bird.—Any Variety Heavy Breed.—Fearon, E. (R.I.R.), 77, 69; McMillan, Mr. & Mrs. T. J. (R.I.R.), 69, 69; Pierce-Grove, Mrs. (W.W.), 67, 67; Greensward P.F. (W.W.), 66, 66; Coverly, G. J. (R.I.R.), 62, 62; Aitchison, Th. (R.I.R.), 64, 59.

NOTE.—Five pullets in Sections 1-5 and one pullet in Sections 6 and 7 constitute a pen.

W. T. WILLIAMS, Hon. Secretary.

Some Fruit-Growing Notes

to help Poultry-Keepers.

By F. W. WHEELER, F.R.H.S.

DISFIGUREMENTS—PRE-BLOSSOM SPRAYING.

It is always very disappointing to have the fruit op spoilt if we have had a lucky time in the ring, and our fruit trees have escaped the ossoms being damaged with late frosts ; or, what often a worse trouble, the continuous cold rains ming while the trees are in flower, for that is re to spoil the polinization of the blossoms.

Having passed safely through the spring trials nnected with our uncertain weather, we must try far as possible to avoid other things that may use loss of fruit or check the growth and de-lopment of our trees. Spraying before the ossoms open and again when the petals fall is portant to stop the ravages of the insects or dis-gurements, etc., of the fungi troubles.

I propose to-day to dwell on just one of the any enemies—namely, the fungus pest which uses so much disfigurement to the fruit of apple d pear trees, for, as I said at the commence-ent of these notes, it is exceedingly disappointing see a promising crop of fruit spoilt in appear-ce by nasty black patches or badly cracked rfaces. Even if not completely spoilt for sale, market value is greatly reduced, and poultry epers know only too well the importance of an tractive looking article if best prices are to be tained.

Only a few days ago I was looking over a friend's chard, and we were noting the greatly improved ndition of his old trees since he had thinned out e crowded branches, removed dead wood and nerally cleaned the trees of lichen and moss by orough winter washes, but he told me that last ar a really good crop of Bramley apples was rtly spoilt because of the disfigurement of much the best fruit, and undoubtedly this was caused the Apple Scab (or Black spot) disease. We scussed the remedies, and it then occurred to me at it would probably be a helpful thing to make at the subject of my next notes for "Eggs." was very prevalent in Kent last year, and it ems to be the general opinion that the continuous et weather was one cause of much of the trouble.

With the apple scab it is usually the leaf which first attacked, and the dark patches are very ticeable. If not completely cured by spraying is fungus pest can be kept in control by the use a Bordeaux Mixture (one well-known to many r spraying against the potato disease). A pper sulphate and lime mixture can be purchased ady for use, and only requires to be diluted with ater to the necessary strength and applied with good mist sprayer. It is important to follow the aker's instructions, especially as some sensitive varieties of apples are susceptible to injury; so for these, such as Cox's Orange Pippin, Lord Derby and James Grieve, it is recommended to apply it at half strength (in either case, considerably weaker than what is used to combat the potato disease). To repeat a remark, spray just before the flower buds open and again when petals have fallen.

Other precautions, such as destroying infected fallen leaves and diseased fruit, together with a late winter spraying of the young wood, with a simple sulphate of copper solution (about ¾ lb. to 10 gallons of water) are further remedies to help in curing trees if badly attacked with this trouble. This spraying against apple and pear scab is at the same time the best remedy against another disease, known as the "Brown rot of fruit."

Lime sulphur is also recommended by some authorities as an effective spray against apple scab, and I mention it because sometimes we may have the one spray handy and not the other. If working with Lime sulphur use it at winter strength (about 1 in 20) before the bursting of the buds, and at the much weaker summer strength (about 1 in 60) immediately after the fall of the blossom. A third spray at this summer strength—two to four weeks later is advisable in orchards badly affected.

I have been working out some costs of lime sulphur spraying, but must leave these figures to be given in my next lot of notes.

POST-MORTEMS—Continued.

B. H. A. I am sorry the time seemed so long, waiting to hear the result of the microscopical examination of the excreta of suspected birds, but such an examination, if done faithfully, takes considerable time, especially when so many samples have to be prepared, and when negative results are obtained, as in this case, the work has to be repeated many times before it is safe to arrive at a conclusion. No coccidia were to be found in any of the samples, but all contained a vast number of worm ova. This shows that although Coccidiosis is absent, that the birds are heavily infested with worms, and the diarrhoea, which is often present in these cases, might easily make one suspicious of something worse. I should advise starving the birds for twenty-four hours, allowing only drinking water with twenty grains per head of Epsom salts dissolved in it, and then mixing a teaspoonful of powdered pomegranate root in the mash for every fifty birds. There was no Coccidiosis in the six W.L. chicks posted to-day, but only pneumonia, and this I should judge came from chill after being over-heated, as they had "sweated" very considerably.

T. G. A. There were no signs of disease in this chick, but only those of complete digestive breakdown. I do not think you can blame the weather for the want of feathering, but the method of feeding. I should advise you to follow Mr. Tom Newman's system of dietary as the rations are correctly balanced for chicks of all ages, and have proved in practice to have given most successful results.

C. D. W. H. The post-mortem examination of the chicks showed that the two chickens were affected with visceral gout, very pronounced in character. Thick layers of urates were deposited on the pericardiums and the peritoneums of both, and the kidneys were also blocked. In spite of this very evident cause I made a miscroscopical examination for coccidiosis, as it seemed incredible that 600 birds of all ages should be affected with gout, and that these might be atypical of what was wrong with the others, coccidiosis being far more probable. However, no coccidia were to be found, and nothing else could be discovered but the gouty lesions. You did not tell me why you suspected the wheat to be the cause of the trouble, but it is within the range of possibility that it might have been in such a condition as to so affect the kidneys and livers that the whole of the body chemistry has become perverted. Eliminative treatment is indicated, starvation for twenty-four hours, followed by proportionate doses of Epsom salts, according to size. Discontinue all animal meals, feeding only grain and green stuffs.

E. E. P. Coccidiosis was not the trouble with the hen, but peritonitis from rupture of the uterus and the escape of egg debris into the body cavity. Rupture of the uterus may occur either from actual tearing asunder of the tissues of the organ in the efforts to expel an abnormal egg, or, as in this case, from ulceration and perforation when an egg has become broken and decomposed. The result in either case is the same, only brought about in a different manner. Imperfect shell formation is often the cause of eggs breaking in the uterus, and as this is mostly a question of a correct diet, this cause, at least, can be obviated by attention to the feeding.

A. B. F. I am glad to say I could find no traces of Coccidiosis in these chicks, but all, with the exception of one, were heavily infested with gape worms, Syngamus trachealis. The exception had succumbed to impaction of the gizzard and proventriculus by a mass of twisted hay or grass which had formed a veritable "rope." If not prohibited by numbers I strongly recommend the individual treatment of "gapes" by the direct injection into the wind-pipe of 15 drops of a five per cent. solution of sodium salicylate. The injection is made with a hypodermic syringe minus the needle, and a short length of small bore india-rubber tubing, the free end of which is passed into the windpipe through the laryngx, the other, of course, being attached to the syringe. Severe coughing and choking follow the injection, the worms being expelled in the process, but casualties are fewer in number than when the fumigation method is used. Fumigation by means of carbolic acid fumes generated by pouring the acid on to a hot shovel, which is introduced into a box in which the birds have been placed, is the most practical where large numbers of birds have to be treated, but great care has to be taken not to overdo the suffocation process, upon which the success of this method depends. The soil harbours both the ova and embryos of the worms, and should be heavily limed to destroy them, and in order to make the drinking water safe for the birds until the outbreak is over, three drams of sodium salicylate should be dissolved in every gallon of it.

APPLICATIONS FOR MEMBERSHIP.

Eyre, Jesse, Hope House, Brough, near Bradwell, via Sheffield.
Anthony, B. de Q., "Oakville," St. Saviour's Road, Jersey, C.I.
Morey, Charles, "Hillmore," Euxton, Chorley, Lancashire.
Provan, David, Gateside, Douglas, Lanarkshire.
Atkinson, S. E., Welsh Road Farm, Southam, Warwickshire.
Fitzgerald, C. M., Commercial Buildings, Dublin.
Neligan, H. L., Kells. Co. Kerry, Ireland.
Muntz, D. A. T., Land's End Poultry Farm, Twyford, Berks.
Aldous, A. M., Nicholas Hill P.F., Henley-on-Thames.
Tagg, W. H., Clipstone Colliery, Mansfield, Notts.
Baird, W. E., East Loans, Largoward, Fife, Scotland.
Symes, R. A., Huntington P. Farm, near Hereford.
Symes, A J., Huntington P. Farm, near Hereford.
Pascall, Mrs. O. G., Milton Vicarage, near Evercreech, Somerset.
Salmon, E. J., Fernbank House, near Kirby Cross, Essex.
Brewster, Miss C., The Forelands, Bromsgrove, Worcs.

YORKSHIRE FEDERATION INTERNATIONAL LAYIN TEST, OTLEY, YORKS.

First ten positions for Specials offered to members of Keighle and District Branch of S.P.B.A. in Class C at end of sixt month:—

Section 9.—1, W. Wharton, Keighley (W.L.), eggs lai value £1 7s. 0¼d; 2, S. Preston, Haworth (W.L.), £1 3s. 1¾d. 3, J. and W. Brayshaw, Keighley (W.L.), £1 2s. 3¾d.; 4 Wright and Fortune, Keighley (Ex. L.), £1 2s. 3¼d.; 5, S Hartley, Haworth (W.L.), £1 2s. 2¾d.; 6, H. Kenshaw, Keighley (W.L.), £1 1s. 11d.; 7, B. and W. Atkinson, Thornto (Bf. L.), £1 0s. 4d.; 8, J. Paget, Keighley (W.L.), £1 0s. 1¼d. 9, F. Waddington, E. Merton (W.L.), 19s. 10¼d.; 10, W Thompson, Glen Lea (W.L.), 19s. 9¼d.

Section 10.—1, Alf. Sawyer, Crosshills (R.I.R.), eggs lai value £1 10s. 4d.; 2, Mrs. Hawkesworth, Pool (W.W.), £1 9s 11½d.; 3, H. Downsbrough, Bradshaw (W.W.), £1 7s. 8¾d. 4, J. Brown, Glusburn (R.I.R.), £1 6s. 5d.; 5, Wright an Fortune, Keighley (W.W.), £1 4s. 11¾d.; 6, H. Downsbrough Bradshaw (W.W.), £1 2s. 11½d.; 7, Miss Taylor, Cullingworth (W.W.), £1 2s. 3½d.; 8, C. Macaulay, Keighley (R.I.R.) £1 0s. 11d.; 9, J. and W. Brayshaw, Cross Roads, Keighle (W.W.), £1 0s. 4d.; 10, Tom Marks, Somerset (L.S.), 19s 2¾d.

The silver spoon offered for pullet with record of highes cash value at end of first six months has been won by Mr. Alf Sawyer, Crosshills, with a R.I. Red.

The next monthly meeting will be held in the Temperanc Hall, Keighley, on Wednesday, May 6th, at 7.45 p.m. A goo attendance is desired. The Annual Show and next Laying Tes will be discussed.

(Mrs.) A. WILSON, Hon. Sec.

OUR FRONT COVER.

Our front cover this week is devoted to Mr. W. M. Golden' Farm, the Eaglesfield Poultry Farm, which is the largest utilit breeding farm in the Midland Counties, and has been establishe over thirteen years.

Twenty-four acres are devoted to poultry, one thousand bird are trap-nested, and individual pedigrees are kept on an extensive scale. The four breeds kept are R.I. Reds (S.C.), Ligh Sussex, White Wyandottes, and White Leghorns, and eac year over five thousand chicks are reared.

Mr. Golden has been consistently successful in the Layin Tests. He won the Poultry Club medal at Harper-Adams' fo the most typical pen of R.I. Reds against all competitors fo two years in succession. Two pens have competed in America One pen finished first over all R.I. Reds, and included "Delawar Princess," who is depicted on our front cover.

The other pen was second against all R.I. Reds in the curren test.

Mr. Golden is a great believer in the R.I. Red, and certainl the breed is very virile, and I think we hear less complaint of fertility and hatching and rearing results than with an other breed.

There are few of us who can remember when they first became popular in this country, and the enormous demand fo them. Then many of the birds imported looked like veritabl mongrels, and it says something for the skill of the Britis breeder that he has been able to improve colour and type t such an extent.

Mr. Golden has had thirteen years' experience with thi breed, and has always bred for the "balanced bird."

WYE COLLEGE DUCK LAYING TEST, 1924-1925.

Held in conjunction with the N.U.P.S. and U.D.C. at the th Eastern Agricultural College, Wye, Kent.

This Test, which commenced on November 1st last, extends er a period of 48 weeks. Each entry consists of five ducks, which there are 155 in all. All the ducks are trap-nested, and run as one large flock on free range over grass land.

For the purpose of awards the birds are divided into four ed classes, viz.: (1) Khaki-Campbells; (2) Indian Runners; (3) ff Orpingtons; (4) Magpies. Separate awards will be made each class.

The eggs are graded according to weight, a first grade egg ng one which weighs 2 ozs. or over. Second grade eggs are se which weigh under 2 ozs.; these do not count for awards.

PORT FOR SIXTH PERIOD (March 21st to April 17th, 1925).

The egg output for the month has been satisfactory, viz.: total of 3,474, as compared with 2,697 last month. The average bird for the month is 22.85 eggs, and the average per bird date is 82.21 eggs.

The health of the birds throughout the month has been good.

Miss Harrison Bell's Pen No. 11 (Khaki-Campbells) retains leading position in the whole of the Test, with a score to e of 650 first grade eggs, an average per bird of 130 eggs.

The leading pens in the Breed Sections are:—

Khaki-Campbells.—Miss Harrison Bell's Pen No. 11, 650 pts.; jor J. Dugdale's Pen No. 2, 539 pts.

Indian Runners.—Mr. W. R. Partridge's Pen No. 19 (Whites), pts.; Messrs. R A. and A. M. Johnson's Pen No. 13 (Whites), pts

Buff Orpingtons.—Capt. W. O'G. Cochrane's Pen No. 22, pts.: Mr C. C. Chittenden's Pen No. 24, 325 pts.

Magpies.—Mr C N. Goode's Pen No. 26, 396 pts.; Mr. J. G. lliamson's Pen No. 30 (Blues), 353 pts

Competitors and others may visit the Test on Wednesdays appointment only.

F W. RHODES, Poultry Department.

AILY MAIL" EGG-LAYING TEST OF FIRST-CROSS PULLETS, 1924-25.

moted by "The Daily Mail" in co-operation with London and orth-Eastern Railway Company. Held at Bentley, Suffolk.

Report for Sixth Month—7th March to 3rd April, 1925.

The outstanding feature of the sixth month was the general average of production of the competing pens, all of which, one exception, and that was two birds short owing to hs, putting up records of 100 eggs or more during the four ks.

Evenness of production has been characteristic of the test the outset and with half its run completed sufficient dates available to justify the view that although first crosses may succeed in putting up such high individual pen records as been made by pure bred stock, they will in the flock average, h is what the commercial poultry-keeper requires, hold their with the best put up by the latter.

The total number of eggs laid during the month was 14.937— g the high average of 21.34 eggs per bird in the 28 days—this probably be the highest point reached in the test, as broodi- is now affecting the egg yield.

uring the month 54 birds required treatment, as compared 19 last month—but the former figures cannot be regarded as for the time of the year.

he lowest daily collection of eggs was 498 on the first day, the highest 572 on the seventeenth day of the month.

here was a further improvement in the size of the egg, the entage of first-grade eggs reaching 92.26—this would point to being no loss of egg size through crossing as contended by opponents to that method of breeding.

he weather during the earlier part of the month was un- urable to heavy egg production, but it improved towards the

he health of the flock was good throughout.

J. N. LEIGH.

GG PRODUCTION OF LEADING PENS. (Seven Pullets).

Figures are Eggs and Points respectively.

ection 1. White Leghorns x White Wyandottes.—F W. Barley, lley Heath, King's Norton, Birmingham, 856, 835; H. Sutton Sons, Little Hoole, near Preston, 746, 736; James M. Abbott, ridge, Old Woking, 732, 718; G. H. Hargeaves, Woodfield, field, 698, 692; John W. Coddington, Muston, Bottesford, 707, Sydney Smith, Clifton, Nottingham, 724, 686.

ection 2. Black Leghorns x Rhode Island Reds.—J. Ashworth, nell, near Chorley, 772, 753; P. K. Berry, Weston-by-Welland, et Harboro', 744, 708; M. E. and A. Robinson, Kingswood, ry, 738, 702; Wilson Beattie, Rotheresthorpe, Northants, 677, G. B. Metcalfe, Claydon Farm, Lechdale, 700, 658.

ection 3. Any Other First Cross.—H. D. Barley, King's Nor- Birmingham, 789, 757; Walter Crabtree, Twiston, near eroe. 770, 750; Mrs. W. Crabtree, Twiston, near Clitheroe, 770, Edward Watkins, Cross-in-hand, Sussex, 700, 698; Frank in, Culdrose, Helston, 676, 644.

ection 4. Any Cross showing Sex-Linked Inheritance.—Hugh rby, Caistor, Lincs., 779, 854; P. E. White, Market Drayton, 775, 658; A. Mansell, Kingston Stert, near Thame, 744, 630; Thorpe and C. Correll, Hallow Farm, near Worcester, 719, Charles Hall, Coulsdon, Surrey, 604, 588.

THE NATIONAL UTILITY POULTRY SOCIETY.

NATIONAL EGG-LAYING TEST, 1924-25.

Report for the Fifth Month—21st February to 20th March, 1925.

The weather throughout the fifth month was unfavourable to heavy egg production, being very cold with a prevalence of North-East winds, to which the Test site is fully exposed. The birds, however, laid well, and the total egg yield for the period reached 37,656—an average of 18.01 eggs per bird, as against 15.70 per bird in the previous month.

There was a steady rise in the daily collections—the highest was 1,516 eggs on the 26th day, and the lowest 1,186 on the 4th day of the month. Size of egg was also satisfactory. the proportion of first-grade eggs rising to 88.70 per cent.

The heavy breeds continued to do better than the light—White Wyandottes taking the lead with an average of 19.51 eggs per bird, followed by Buff Rocks with 19.31 and Rhode Island Reds and Light Sussex with 18.32 and 18.41 respectively. Of the light breeds Black Leghorns did best, putting up an average of 18.40, and Anconas coming next with 17.94.

White Leghorns were disappointing, only averaging 16.89; they appeared to suffer severely from the cold winds.

Broodiness showed a slight increase, and 84 birds passed through the broody coops; of these 82 were of the heavy breeds and 2 of the light.

The general health of the flock was very good throughout the month.

In last month's report the name of the winner of the Winter Months' Silver Medal in the White Leghorn section was given as F. W. West, in error for F. W. Weeks. Figures are Eggs and Points respectively.

EGG PRODUCTION OF LEADING PENS.

Section 1. Championship (10 Pullets).—G. B. Metcalfe, Lechlade (R.I.R.), 893, 890; F. Snowden, Cowling (W.L.), 824, 823; Lady Seeley, Arnold (R.I.R.), 826, 811.

Section 2. White Leghorn (Five Pullets).—F. W. Weeks, South Woodham, 465, 465; Mrs. Pallant, Wherstead, 430, 430; Mrs. E. M. Knight, Odstock, 423, 421.

Section 3. Black Leghorns (Five Pullets).—Lady Anderson, Harrold, 489, 468; R. Garrett, Wheathampstead, 383, 383; Mrs. Mignon Clay, Preston, 369, 369.

Section 4. Any Other Light Breed (Five Pullets).—P. K. Berry, Market Harboro' (An.), 410, 408; J. H. Thompson, Four Marks (An.), 369, 369; R. West, Hilly Laid (An.), 351, 350.

Section 5. White Wyandottes (Five Pullets).—A. K. S. Alexander, Roughton, 485, 485; G. Keith Simmons, Hembury, 476, 476; J. T. Finn, Marple, 463, 463.

Section 6. Rhode Island Reds (Five Pullets).—J. H. Berry, Ottery St. Mary, 472, 471; Lady Dorothy France, 449, 449; A. Gawthrop, Northampton, 440, 438.

Section 7. Sussex (Five Pullets).—T. Brooksbank, Hedon (L.S.), 451, 449; Rossall-Sandford, Ford Hall (L.S.), 440, 440; Mrs. E. M. Knight, Odstock (L.S.), 413, 413.

Section 8. Any Other Variety (Five Pullets).—Miss Harrison Bell, Welwyn (Bf.R.), 407, 407: A. A. Plimpton, Walkington (Bf.R.), 402, 402; A. M. Kemp-Gee, Chesham (Bf.R.), 395, 395.

"LEICESTER MERCURY" COUNTY LAYING TRIALS.

Officially supervised by the Leicestershire County Council—Agricultural Education (Joint) Committee—Horticultural Sub-Committee.

7th Monthly Report for the period Mar. 23 to April 19, 1925.

The seventh monthly period of the above trials terminated on the 19th inst. ,and Mr. W. Rolling reports that during this period there has been a further increase in egg production, 2,301 eggs having been laid, as against 2,124 for the previous month. This gives an average of 20.6 eggs per bird for the month, which may be considered as the maximum of production, for broodiness is now showing itself among the heavy breeds. The total number of eggs laid during the 28 weeks is now 12,794, an average of over 114 eggs per bird.

The leading positions show no change. In the Light Breed Section Mrs. R. Crawford's White Leghorns still lead with a total of 749 eggs for the seven months. Mrs. E. Ball's R.I. Reds still lead in the Heavy Breed Section with 814 eggs. The best performance for the month was again made by Mr. T. F. Wildman's pen of R.I. Reds with 143 eggs, an average of six eggs per bird per week. One R.I. Red pullet, owned by Mr. C. B. Payne, has on two occasions laid two first-grade eggs in one day; on the first occasion both eggs were laid during one visit to the trap-nest. Another bird in this pen and one of Mr. Wildman's R.I. Reds also laid two eggs in one day. The best performance was made by one of Mr. J. T. Kidger's W. Wyandottes, which laid 28 eggs in the 28 days.

No case of disease or death has occurred throughout the period of the trials.

Section 1.—Division [illegible].—Light Breeds (6 birds).—Mrs. R. Crawford (W.L.), 749 eggs; Crawford & Dowell (W.L.), 685; J. & A. Moore (B.L.), 526. Alan Kemp (B.L.), 550.

Section 1.—Division B.—Heavy Breeds (6 birds).—Mrs. E. Ball (R.I.R.), 814 eggs; T. F. Wildman (R.I.R.), 865; Miss G. Belgrove (R.I.R.), 768; C. B. Payne (R.I.R.). 774; Lady Dorothy Fraser (R.I.R.), 777; Crawford & Dowell (R.I.R.), 774.

Section 2.—Any Breed (2 birds).—J. T. Kidger (W.W.), 332 eggs; Geo. Gilliver (W.W.), 270; Geo. Stevens (An.), 251; Miss D. Walton (W.L.), 210; Mrs. Gilliver (R.I.R.). 140.

H. T. ATKINSON, County Poultry Instructor.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, APRIL 24th, 1925.

GRAIN AND FEEDING STUFFS.—English wheat meets a slightly improved trade at higher prices, but the market for imported is very unsettled and prices have fluctuated considerably; average quotations generally are lower on the week, No. 1 Manitoba being quoted at 5d. per cwt. less at London and Bristol. English feeding barley is in good supply and meets a slow trade at recent quotations, while imported descriptions are rather dearer at Bristol and London, but at other centres prices are easier. Home-grown oats are somewhat dearer on the week; at Bristol an advance of 6d. per cwt. is recorded, while at London values are higher by from 2d. to 4d. per cwt. Foreign oats mostly sell at about late rates, but some descriptions, with a dull trade, are reduced at Hull and Liverpool. Maize is in better demand and dearer, the average price for Argentine now being 9s. 10d. per cwt. as against 9s. 3d. last week.

Bran is in request and prices have advanced at most centres, the increase at Bristol amounting to 12s. 6d. per ton, while coarse middlings at London and Liverpool are 2s. 6d. and 5s. per ton respectively dearer. Meals are little changed in price, but maize meal has advanced at most centres. Linseed cake sells at about late rates, but cotton-seed cake is dearer at Hull and London.

MILLERS' OFFALS.—Bran (British): Bristol, £8 7s; Hull, £7 12s; Liverpool, £8 5s; London, £7 10s. Broad Bran: Bristol, £10 2s; Hull, £9 2s; London, £8 15s. Middlings—Fine (Imported): London, £9; Coarse (British): Bristol, £8 10s; Hull, £8 5s; Liverpool, £8 5s; London, £8 5s. Pollards (Imported): Bristol, £7 7s; Hull, £6 15s; London, £7 2s. Rice Bran: Liverpool, £7 15s. MEAL.—Barley Meal. Bristol, £11 5s; Hull, £11 5s; London, £11 12s. Maize Meal: Bristol, £11 10s; Hull, £11; Liverpool, £10 10s; London, £10 10s. Maize Meal (S. African): Bristol, £10 15s; Hull, £9 10s; Liverpool, £9 7s. Maize Germ Meal: Bristol, £11; Hull, £9 10s; London, £9. Maize Gluten Feed: London, £10 5s. Locust Bean Meal: Bristol, £9 10s; Hull, £9 10s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 8s; London, £13. Fish Meal: Bristol, £21; Hull, £20; Liverpool, £19; London, £20 10s.

EGGS AND DEAD POULTRY.

English and Irish eggs sell at firmer prices in consequence of an improved inquiry, while imported eggs have been in heavier supply at London and are held for late rates.

Week-end Prices—Eggs (per 120): British, 13s. 3d, 12s 3d; Irish, 13s 0d, 12s 6d; Danish, 14s 6d;, 14s 3d; Dutch, 14s 0d, 13s 9d; Russian, 11s 8d, 11s 2d; Belgian, 13s 4d, 13s 0d; Italian, 13s 2d, 12s 8d; Egyptian, 9s 6d, 9s 3d; Lithuanian, 12s 0d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 3d, 1s 9d; Irish, 1s 10d, 1s 3d; Others, 1s 11d, 1s 5d. Ducks, 2s 3d, 1s 4d. Geese, 1s 3d, 1s 0d. Turkeys, 1s 6d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 1s 3d; Second, 1s 2d. Birmingham: First, 1s 4¼d; Second, 1s 3½d. Bridgwater: First, 1s 4d; Second, 1s 2½d. Doncaster: First, 1s 4d. Dorchester: First, 1s 3½d; Second, 1s 3d. Exeter: First, 1s 2d. Hereford: First, 1s 2d; Second, 1s 1d. King's Lynn: First, 1s 1d; Second, 1s 0d. Llandilo: First, 1s 0d. Mold: First, 1s 1d; Second, 1s 0d. Montgomery: First, 1s 0d. Newport (Mon.): First, 1s 3d; Second, 1s 2d. Norwich: First, 1s 3d. Oswestry: First, 1s 1d. Penzance: First, 1s 1d; Second, 1s 0d. St. Ives (Hunts): First, 1s 2½d; Second, 1s 1½d. Skipton: First, 1s 2d. Truro: First, 1s 1d. *Carlisle: First, 1s 4d. *Derby: First, 1s 3d. *Ipswich: First, 1s 4d; Second, 1s 2d. *Lincoln: First, 1s 3d. *Shrewsbury: First, 1s 3d; Second, 1s 2d. *York: First, 1s 3d; Second, 1s 2d. Chelmsford: First, 1s 3½d; Second, 1s 2½d.

FOWLS..

Per lb.—Birmingham: First, 1s 8d; Second, 10d. Doncaster: First, †5s 0d. Exeter: First, 1s 10d. Hereford: First, 1s 8d. Llandilo: First, 2s 4d; Second, 2s 0d. Newport (Mon.): First, 1s 9d; Second, 1s 4d. Truro: First, 1s 5d. *Derby: First, †5s 9d; Second, †4s 0d. *Ipswich: First, 1s 9d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 1s 4d. *York: First, †6s 3d: Second, †5s 0d.

DUCKS.

Per lb.—Exeter: First, 1s 5d. Llandilo: First, 2s 4d; Second, 2s 0d.

* At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. † Per Head.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, April 29th, 1925.

CONTENTS.

EDITORIAL 27
ANSWERS TO QUERIES 27
POST-MORTEMS ... ... 277 and 28
LANCS. FEDERATION OF U.P.S. LAYING COMPETITION 27
COCCIDIOSIS 27
MODERN POULTRY FEEDING 27
HOUSING 28
S.P.B.A. ... ... 281 and 28
YORKS. FEDERATION OF P.S. EGG-LAYING TEST 28
CORRESPONDENCE ... ... 283 and 28
EAST ANGLIAN EGG-LAYING TEST 28
SOME FRUIT GROWING NOTES 28
WYE COLLEGE DUCK LAYING TEST 28
"DAILY MAIL" EGG-LAYING TEST 28
NATIONAL U.P.S. EGG-LAYING TEST 28
"LEICESTER MERCURY" EGG-LAYING TRIALS 28
MARKET REPORT 28

Contributions.—The Editor will always be pleased to conside contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence " Eggs " to their poultry-keeping friends.

Subscriptions to " EGGS," 12s. 8d. per annum; 6s. 4d. for s months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, Th Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeche Rudgwick, Sussex.

All communications with regard to Advertisements should addressed to Mr. S. H. Burles, " Eggs," 94, Farncombe Stree London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first pa of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of " Eggs," it imperative that new advertisements and alterations are receive by FIRST POST ON FRIDAY MORNING to ensure insertion in th following Wednesday's issue. It is hardly necessary to add th the earlier in the week we receive copy the better it is for ever one concerned.

COMMUNITY POULTRY FARMING.

To the Editor of "Eggs."

Dear Sir,—There is one sentence in my letter in thi week's "Eggs" on the above subject that does no read as I intended. It is "I look upon poultry-keepin as a business in which to invest capital for someon else to earn the living." It should read: "I loo upon poultry-keeping as a business to earn one's living not as a means of investing capital for someone els to earn the living."

The kind of co-operation I believe in is the S.P.B.A discount scheme. Within the last month I have save enough through the scheme to pay my subscription t the S.P.B.A. for more than ten years.

Yours faithfully,
W. HALL.

EG

Wednesday, May 6th, 1925.

EGGS

THE OFFICIAL ORGAN OF
THE
SCIENTIFIC POULTRY BREEDERS ASSN.

(Founded in 1912 by RANDOLPH MEECH).

gistered at the G.P.O. as a Newspaper.
XI. No. 18. Copyright.

Edited by TOM NEWMAN.
Price TWOPENCE.

Twelve Months Post Free 12/8
Six Months " " 6/4
Three Months " " 3/3

AUG 28

EXTENSIBLE UNIT BUILDINGS

TWO ALL-PURPOSE LAYING HOUSES, 60 ft. x 15 ft. each. Supplied to James Crawford, Esq., Battle, Sussex.

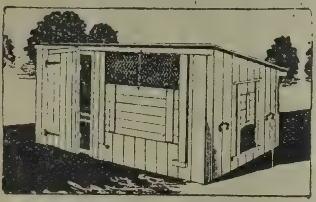
SIMPLICITY and **ECONOMY** are combined in the "ALL PURPOSE" Model, which may be used to house a number of breeding pens or breeding flocks—for brooding and rearing, and finally may be arranged as a laying house by fitting detachable dropping boards and perches.

W. H. COLT, M.N.U.P.S., M.S.P.B.A., **Bethersden, Nr. Ashford, Kent.**

DO YOU USE HEBDITCHS' SPLENI POULT HOUSE

They are the Very Best that Money can Buy—and the Cheapest.

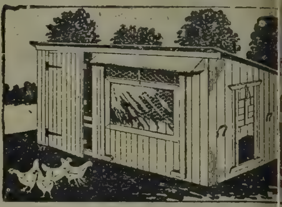
The "DREADNOUGHT" Poultry House.



6ft. long, 4ft. wide, 4ft. high in front. Best ⅜in. red deal boards and red deal framing are used to construct it. The boards are tongued and grooved and V-jointed. The framing is 2in. x 1in. The window is protected by wire netting. The "Dreadnought" is provided with a strong door, hung with strong hinges. Hen door, two 2in. x 1½in. perches. It is sent in five sections with strong screws for erecting.

PRICES—£2 6 0; Three for £6 13 6.
Six for £13 2 6; Twelve for £26 0 0.
Floors 13/- each extra.
Pickled with Preserolium 1/- in the £ each extra. Prompt despatch.
Carriage Paid in England and Wales.

The "FEARNOUGHT" Poultry Hou

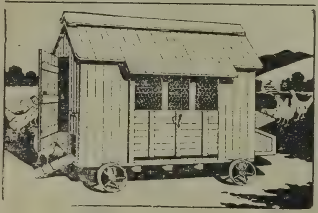


Size—6ft. long, 4ft. wide, 4ft. high. Price £2 11 6d.
Made of ⅜in. boards.

Three for	£7 10 0.
Six for	£14 15 6.
Twelve for	£29 6 0.

Floors 13/- each extra.
The up-and-down shutter is of glass. Best ⅜in. Swedish red deal boards, planed, V-jointed, tongued and grooved are used to construct it. Door hung with stout hinges and fitted with good press lock
and key. Behind the window is 1in. mesh wire netting. Shutter s
pended on strong chain; good ventilation is thus easily
Two substantial perches, hen exit, cleats round attendant's d
four strong handles for lifting. Made in sections and sent out w
screws for erecting. Carr. paid England & Wales. Quick despa
If immersed in Preserolium (pickled) the cost is 1/- in the £ ex

The "MEADOW" Farm or Field House.



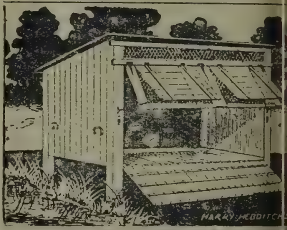
It is strongly made of the best ⅜in. Red Deal Boards, which are tongued and grooved and V-jointed, strong door, sliding shutter. Nest boxes and perches. Wheels made of solid stamped steel 15in. in diameter. 3in. in face. Sizes: No. 1 is 4ft. long, 4ft. wide, 6ft. 6in. high. No. 2 is 6ft. long, 4ft. wide, 6ft. 6in. high. No. 3 is 7ft. 6in. long, 5ft. wide, 7ft. high. No. 4 is 9ft. long, 6ft. wide, 7ft. 5in. high.

Price: No. 1, £6 14 0. No. 3, £9 8 6.
No. 2, £7 4 0. No. 4, £11 19 6.

Carriage paid in England and Wales. Prompt despatch. If pickled with Preserolium by Immersion the cost is 1/- in the £ extra.

The "ATHELNEY" Duck House.

Size—6ft. long, 4ft. wide, 4ft. 9in. from the ground.
Price, £4 0 0.



The "Athelney" Duck House has several entirely new features. It will be noticed by referring to the illustration that the bottom half of the front drops down and the top half lifts up. Thus the bedding can be exposed to the drying influence of the air. The bottom half is made in two portions. The ducks can also be handled without attendant going inside the house. And the birds can also be kept in and yet get plenty of fresh
air each morning until they have laid. Made of best ⅜in. best
deal, tongued and grooved and V-jointed. Carriage paid Engla
& Wales. Prompt despatch. Immersed in Preserolium (pickled)
1/- in the £ extra.

The "LORNA DOONE" Foster Mother.

For Real Success in Chick Rearing the "LORNA DOONE" is an easy first.

She is also Easy to Work, Economical, and Develops the Chicks by Sure and Sanitary Methods.

"Lorna Doone" - Reared Chicks are Vigorous Healthy and Strong.

No. 1 is 4ft. long, 2ft. wide. For 60 to 70 chicks, Price £3 18 0.

No. 2 is 6½ft. long, 3ft. wide. For 100 chicks, Price £5 12 6.

Both sizes are painted two coats good oil paint, and roof covered with thick Bitumen felt.
Carriage Paid to any Station England & Wales. Prompt despatch.

The "EXCELSIOR" Semi-Intensive Hou

The "EXCELSIOR" is made of best ⅜in V-jointed, tongued and grooved red deal. It is specially suitable for semi-intensive work, and is for this purpose used by thousands of poultry-keepers all over the country. It is provided with a strong perch the whole length of house, and a wide dropping board below it. This is a most suitable House also for a Breeding Pen.

No. 1 size—9ft. long, 5ft. wide, 5ft. 6in. high. It has two glass wi
dows. No. 2 size—12ft. long, 6ft. wide, 5ft. 8in. high. It has thr
glass windows. It is made of ⅜in. Red Deal boards. PRICES
No. 1, £7 8 0. Floor, 26/- extra. No. 2, £9 15 6. Floor, 39/- ext

Carriage Paid in England and Wales. Prompt despatch.
If pickled with Preserolium the cost is 1/- in the £ extra.

HARRY HEBDITCH, Ltd. (Desk J), MARTOCK, SOMERSET.

Makers of Poultry Appliances to H.M. THE KING and H.R.H. THE PRINCE OF WALES.
SEND FOR CATALOGUE OF ALL POULTRY-KEEPERS' REQUISITES. IT IS POST FREE.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association
WEDNESDAY, MAY 6th, 1925.

Editorial.

DEAD-IN-SHELL.
THE EGG OR THE INCUBATOR.

o apology is needed for returning once again to evergreen, or, shall we say, well-worn subject. rcely a day passes without our being asked to throw e further light upon it, as if that were possible. ing the past few weeks many hundreds of eggs have n sent to us by our readers and members of the .B.A. in the hope that we may be able to tell them cause of the failure to hatch. In the great majority ases it has been possible to do so; in others we t confess ourselves as puzzled as the senders. The nination of such a large number of eggs, however, not fail to provide some useful data, and from the erience gained we propose to treat the subject from ther different standpoint.

is a curious fact that we have come to look upon sitting hen as a 100 per cent. hatcher. Most of us heard tales of the old hen which stole her nest, came to the back door one fine day with a dozen fteen sturdy chicks behind her. Only those who h on a large scale with hens know what a fiction is. We think we should not be far wrong if we that the *average* hatch under a hen is about 75 cent., and certainly it does not exceed 80 per cent. sserting this we are perfectly aware of cases where en has hatched a chick from every egg. No doubt cases could be cited by the score, but nine or ten s from a dozen or thirteen eggs is nearer the mark. ng the average hatch with incubators throughout country, under *normal* conditions, we should place about 65 per cent. of eggs incubated. Thus leaving argin of 10 per cent. in favour of the hen.

eferring once more to the eggs examined this year, er more than 70 per cent. of these could be ribed as "unhatchable." That is to say, they infertile, addled, or the embryo had died before ifteenth day. We specify the fifteenth day because, e that period is reached, it is hardly possible that itions can occur in the incubator which would the death of the embryo, with the single excepof too low or too high a temperature. In a large ber of cases chicks are undoubtedly weakened by ow a temperature in the first few days of incubaand this would cause a number of deaths at us stages. We are dealing with the normal. is far less carbon-dioxide in an incubator than a sitting hen; therefore we can dismiss the idea that the embryo perished at this stage from lack of oxygen.

In previous issues we have referred to the fact that a high percentage of dead-in-shell is due to the bad storage of eggs intended for incubation, more particularly is this the case on the large farms. So frequently the question is asked: "How long can eggs be kept for incubation?" Generally the reply is: "For about ten days." Both the question and the answer are foolish. Every day the egg is kept it deteriorates, the greater the evaporation the tougher and drier the two membranes become; the tougher and drier they are the less permeable are they to gases; thus there is not the necessary intake of oxygen for the healthy development of the embryo, which is proportionately weakened. The effect of keeping will vary greatly with different eggs, because of the great variation in the texture and porosity of the shell. In investigating the dead-in-shell problem, the question of the age of the egg must be kept in mind, for it is a very important point in connection with the hatchability of the egg and the vitality of the chick. It should, we think, be more fully recognised that the death of the embryos at various stages of incubation may be directly connected with the age of the egg when incubated and the manner in which it has been stored, and that losses which occur before the fifteenth day are in 90 per cent. of the cases *not due to conditions in the incubator.*

In examining large numbers of eggs in which the chick has reached the hatching stage, but has not pierced the shell, we most frequently find the chick completely fills the shell, which in itself is very brittle from the action of the carbon-dioxide. In these cases we generally find that there has been an excess of moisture in a badly-ventilated incubator, and in the great majority of them these losses occur in tank machines. Less in evidence are those which perish from lack of sufficient moisture. Here the chick is shrunken, with the result that there is a large air space; the membranes are tough and dry, the shell quite brittle, but not so thin as in the case cited above. In some cases there is no doubt that this condition is due to stale eggs, and it frequently occurs with thin-shelled eggs. More often than not it occurs in hot-air machines, where the felts have been removed according to maker's instructions.

The eggs of the pheasant and the guinea fowl take 25 days to hatch. Both these birds are smaller and finer in bone than many varieties of our common fowl. The shell of the egg is of much closer texture and thicker than the shell of the hen's egg, and we may assume that from this cause alone is due the slower development of the embryo. This is a point, we venture to say, which has not been given sufficient attention in the investigational work connected with the dead-in-shell question. In examining one dozen eggs sent, ten of which contained chicks which had reached the 20th day, we found that in eight of these eggs (White Leghorns) the shell appeared wholly unaffected by the action of the carbon-dioxide during incubation, in spite of the fact that the membrane was in a moist condition. The shell was in every respect like that of a new-laid egg, and it was due eutirely to this that the chicks failed to hatch. After noting this fact we were careful to examine the shell of a large number of eggs subsequently received, and in a considerable percentage we found conditions exactly similar to those described above—the chick fully developed, the membrane moist, and the shell thick and hard, not brittle as is the case in most unhatched eggs which had reached the same stage of development. In a very high percentage of these cases the eggs were not those of the non-sitting breeds. Barnevelders we know lay an egg with a very thick shell, of close texture, and the eggs are more difficult to hatch in incubators than those of other breeds The difficulty, to some extent, could be overcome if more moisture was supplied from the first, and the eggs were sprayed during last few days of incubation, and it would be advisable to incubate them separately. In some of the eggs sent us from this breed there was reason to believe that if the eggs had been given a few more hours in the incubator the chicks would have hatched successfully. Some Rhode Island Reds also lay eggs with a very thick shell of close texture, and failure to hatch was in some cases due to this, but this was not noticeable in the eggs of Wyandottes or Sussex.

It will be agreed that in discussing the dead-in-shell problem we have given far too much attention to incubator conditions and too little to the subject of the egg itself. The clutch of eggs we place under a hen will not differ so materially one from another as the twenty score we place in an incubator, and we cannot expect that the egg of the Barenevelder, with its much thicker shell, to hatch under exactly the same conditions as those of the average Leghorn or Wyandotte. It is certainly a mistake to incubate the eggs of the heavy and light breeds together. To sum up, we believe that, given the standard makes of incubators, and nothing abnormal occurring during the period of incubation, that failures to hatch should be more carefully studied from the egg than from the machine. To take a typical letter which was received three weeks ago with four dozen eggs:—

> "Can you give me any assistance? Our last hatch was 72 per cent. of eggs put in; it has now dropped to 51 without any apparent reason. Thermometer has been tested, and found correct, and the machine ran fairly throughout. One morning we found the temperature had dropped to 100 degrees This happened on the 13th day. Would this have caused such a failure as this; we can hardly think so."

This would, needless to say, not have caused the failure. On examining the eggs it was found that only 11 of them could be fairly described as dead-in-shell; that is had reached the hatching stage. Of remainder, they were either addled or the em had died before the 10th day. Obviously the condit in the incubator would not have caused this It w case of the eggs and the breeding stock.

(Continued at Foot of Next Column.)

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

REGISTRATION OF EARLY-HATCHED PULLETS.

I have received the following letter from L. F. Chitty in support to the suggestion ma that the early-hatched pullet should be registere

> "It would be a splendid thing if arrang ments could be made for the registration the early-hatched pullet. I, like many othe have found these early birds to be most pro able as regards egg production, and I sugg the following rule would get over the di culty:—'50 eggs or more in the first 90 da following the day on which the pullet lays first egg.' I say 50 because I think the as required for the winter test is not enoug and could easily be increased to 50 now th egg production has got to such a high pitch

I shall be glad to receive further suggestic from our members, as the matter will have to co before the Council again. With reference to w Mr. Chitty has to say as to the winter record be raised to 50 eggs, this question was very f discussed when it was raised to that number, the almost unanimous opinion was that there nothing to be gained by increasing it to 50. M individuals with records of 40 are better breed than those with 50.

BLOOD TESTING BREEDING STOCK.

Mr. Chitty writes to say that he thinks it wo be a splendid thing if all members' breeding st could be tested and not only the registered pe I am not in a position to do as he requests, give members information as to cost. It wo be inadvisable, I think, to make it compulsory test only stock which it is desired to register, this might prove misleading. If special provis is made in the Register for blood-tested pens should be on the understanding that all breed stock on that farm should be registered. I m confess that the situation is rather diffic Three cases have been reported to me during last fortnight, in which the writers state chicks have been hatched from bought eggs, breaks of B.W.D. have occurred, and when breeders have been written to, they have sta t could not possibly be, as all their stock has blood-tested. In each case the post-mortem nade by perfectly competent persons.

ROUP.

orrespondent writes that he has found the ing remedy very effective with roup. I may hat it is not by any means a new one; we hed it in "Eggs" some six years ago, and of our members wrote to say that they had it very useful; but then I know so many ics for roup. I have never tried this myself, eaders must test it at their own risk. I not publish it, only my correspondent writes enthusiastically about it, and the cost is a bagatelle—IF it cures the birds. In a spoon- fine flour, pour 20 drops of pure chemical ote; this will make 20 pills (one drop to pill), mix thoroughly and roll out, and give ll night and morning; in bad cases you may the dose. In bad cases it would be much to kill the bird. It is curious how people eat cases where, if the bird was cured, it never compensate them for their trouble. the end of November a reader wrote that d a valuable Wyandotte hen, almost at her asp with diphtheretic roup. He had been d to try a certain remedy, and asked what ght of it. The remedy has given good re- in some cases, and in others it has been ineffective; later he wrote to say the hen cured," and that she was in the breeding It is all so inconsistent. How can we breed us healthy stock if we do such things as

GAPES.

es have been very prevalent this year. Never do I remember to have received so many ies. It seems so futile, when an outbreak on a large commercial egg farm and dozens cks may have to be treated daily, to advise g a feather in turpentine and extract the in this way. Equally futile is it to say icks should be moved to fresh ground when ooder house accommodates 500 and is a , and yet it is very difficult, or almost im- le, to deal successfully with an outbreak the chicks remain on ground infested with rm. Eggs develop in the female worm while windpipe, and these may be sneezed up by ick or scattered in the excreta. The young after hatching live a long time in the soil, e sometimes taken into the digestive tube hworms. So that we can understand why l on which chicks are raised year after year ecome badly infested. Now as to prevention eatment. Where the ground is known to be d, chicks should not be let out on it in the norning when there is dew or hoar frost, er rain. Those which show symptoms of uble should be removed to a separate coop, ed in a box with lime on the floor, and be in the drinking water 15 grains of salicylic acid to the quart, or 12 drops of turpentine will answer equally well. Chicks have been placed in a closed box, and subjected to the fumes of tobacco smoke, and also to the fumes of sulphur; but this is rather drastic treatment and often ends fatally with all but the strongest. Carbolic acid fumes have also been tried, and some years ago a member of the S.P.B.A. told me he had been very successful by enclosing the chicks for a short time in a newly creosoted box. The safest treatment is the salicylic acid or turpentine. I have also known good results with spirit of camphor, used as the salicylic acid is advised.

I think this is more effective than a remedy which I have used with a fair amount of success and which is perfectly safe. This is two parts by weight of powdered chalk and one of powdered camphor. The chicks are placed in a box, and this is dusted in while they are confined, so that the box is full of the dust.

With regard to the treatment of infested land, this is difficult, more especially if it is not well drained. It should be thoroughly limed, ploughed, seeded, and rested for two years. Again, how futile such advice is in the majority of cases! I can only offer one more practicable suggestion, that is soaking the soil with a one per cent. solution of sulphuric acid.

Turkeys harbour the gape worm, although they very seldom exhibit symptoms, but they are a very important source of infection, and for that reason it is a great mistake to rear young turkeys and chicks together.

FOOD PURCHASE SCHEME.

The Food Scheme promises to prove a great success—I must confess a greater one than I anticipated. A large number of orders have been received and executed to everyone's satisfaction; there has been one complaint. Don't please think I am asserting perfection, we are very very far from that yet, and we shall have to round off the rough corners as we go along. Arrangements have now been made with nearly twenty firms in various parts of the country, and we are endeavouring to extend the connection. In some districts we have not been able to compete with the prices members are paying there (or perhaps it would be more correct to say to improve on them), but we are graduallv pushing our way, and many members have written to say that in several of the foodstuffs on our lists their millers have come down to our prices rather than lose the order. There has been a great demand for the S.P.B.A. mashes, and we can now offer Chick Mash at £12 10s., Layers' Mash £11 10s., Growing Mash £12 5s., Breeders' Mash £12, F.O.R. A Western reader has written to say that he has effected a saving of 25 per cent. in buying the Layers' and Breeders' Mash through us.

(We have now arranged that these may be supplied in 5 cwt. lots onlv, of each mash, at two ton rates.) You can obtain the weekly price list by sending a postcard to this office.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (**NOT** from **Major Saunders**).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

F. L. (Wimborne) writes that he has not done any rearing for the last year, and he will have no two-year-old hens for breeding next season. He has used this year two-year-old hens with three cockerels from Dr. Baldwin's No. 1 Pen, which have so far served him well, hatching over 80 per cent. sturdy chicks, all doing well. He now wants to know if it would be advisable to keep these breeders on for another year (three-year hens and two-year cocks), or breed from this year's pullets. Further, he has a batch of 130 Leghorn chicks, hatched 23rd March, and the cockerels are beginning to show red. After four weeks' care it is annoying to only realise 6d. or 8d. a couple for them. He has a very suitable, well lighted shed, 10ft. square, doing nothing, and he wants to know if it would pay him to run the cockerels on for three months on a special food, and if so he would be glad if I would make a special ration for the purpose. In answer to his first question. It would certainly be advisable to keep these two-year-old hens for another breeding season. I should prefer them to the pullets, but would prefer to mate them to active young cockerels rather than to the old birds. He might, if he wished, breed from some of his early-hatched pullets. In answer to his second question, I do not think it would pay him to keep on these cockerels, or run them on for three months, and feed on a special food. It is too late in the season now to do that with profit with Leghorn cockerels. That answers very well in the earlier part of the season.

N. L. W. (Stanford-le-Hope) wishes to know a good dry mash for chicks from eight weeks old, and a good laying mash for laying birds. The following would be a good dry mash for chicks from eight weeks old to
five months:—2lbs. bran, 1lb. alfalfa, 4lbs. middli
1½lbs. Sussex ground oats, ½lb. maize meal, and
meat and bone meal. If the birds are on free ra
the alfalfa meal is unnecessary, and could be repl
with another part bran. For a laying mash
cheapest I can give him is the one which has
so often given before, namely:—2lbs. bran, 4
middlings, 2lbs. maize meal, ½lb soya bean meal,
½lb. meat and bone meal.

"Greenhorn" (Abinger) writes:—"I have a floc
about seventy White Wyandotte hens, hat
January and February, 1924, which I have m
amongst other stock, etc., to a fresh farm. T
birds have been laying very well during the wi
They are housed in one house, 30ft. x 10ft., fee
according to your formula. They have free range,
have a regular supply of water. The other eveni
spotted a case of Avian Diphtheria. The hen's m
was swollen on one side with objectionable ch
matter. I removed this bird to an isolated spot,
am feeeding her less forcing mash (wet), drin
water tinctured with potash permanganate crys
and have washed the mouth with iodine. I exam
the flock the same evening, and found four other c
and these I am treating in the same way. I ca
understand the cause of the outbreak unless it is
to chill caught in transit or infection from crates,
I borrowed and *foolishly* failed to disinfect."—
always difficult to trace an outbreak of this kind,
as I have so often stated before, we know no
more about roup than we did forty years ago.
birds carry the infection, and rooks and sparrow
often found to be suffering from the disease very
There is, of course, the question of infection th
the crates, which was possible, but this is a conjec
and we do not know how the outbreak origi
occurred. The growth should be removed with a
piece of wood, taking care not to make it bleed,
the spot painted with either tincture of iodi
brushed over with a solution of common salt and
—two drams common salt dissolved in a quart of
water. Give sulphate of copper in the drinking
at the following rate:—Dissolve four ounce
powdered sulphate of copper in a quart of water
add one ounce of the solution to every gallon of
ing water, and allow the birds nothing else to
Supply as much fresh green food as you can po
stuff into the birds. This is important, and, in
tion, give them flowers of sulphur at the rate of
pound to every 100 birds, every other day, in the
I should keep close watch for all affected birds,
the dropping boards with some disinfectant.

"Antrim" (Magheragall) writes that some
year-old hens seem to take a cold in the eye. It
with a sort of bubbly froth in the eye. He ge
of them at once, but is told that it is the start of
and that from that it goes on to growths in the
etc., and he thinks, at any rate, it seems infec
and would be glad if I would tell him what it is.
may be but an infectious cold At any rate, it
be wise to treat at once. Sulphate of copper
drinking water in the same proportions as advi

reenhorn" above would be the safest treatment. I not think this is likely to develop into diphtheritic p. as my correspondent fears, but he should be eful to see that his house is well ventilated, and re is no draught. With regard to books on disease, rd and Gallagher's "Diseases of Domestic Birds" ild be the best for his purpose, and for general poul- farming we would recommend "One Man Poul- Farming," by A. H. Capper, obtainable from se offices at 1s. 3d. post free.

I V. T. (Tower Bridge) writes to ask at what age ponized cockerel will foster chicks. At six months apon can be used for breeding a hatch of chicks. ne two or three years ago Mr. Raymond Copper cribed in these columns how he induced a capon to e to chicks. These came from a hen, and were a k old at the time, but undoubtedly it would be a ch more simple matter with incubator chicks. I not tell my correspondent where he can get the onizing performed, how much it would cost, nor re he could obtain instructions in caponizing. He ld obtain the instruments, I think, from Messrs. atts. I think it would be cheaper from many points view to have the cockerels caponized than to have trust to broody hens, but I have never known a on to hatch and rear chicks. They will rear them. that I have had personal experience.

---

ama (Leominster) writes that he bought andotte eggs from a breeder, and has a lovely lot chicks, now a month old. The breeder has now red him the sire of these chicks, and says they ld make a splendid mating for the pullets next son. Gama is tempted to buy because the dam's rd was 272 eggs, 2¼ozs. in weight. I think he ld be gravely mistaken if he made such a mating. re is nothing whatever to recommend it. I have epeatedly pointed out that these close matings are justified with the most exceptional birds, and na has to prove his pullets exceptional. Further, nd it very hard to swallow that 272 2¼oz. eggs. sample of chick feed sent contains far too much et, and the maize is too coarse.

. F. (Colne) is worried over a sudden drop in the yield. The birds seem out of condition, and there me diarrhoea; combs are in a few cases purple in ur, and the birds mopey. He encloses a sample nash. If he had sent his address I would have ten to him. It is curious that anyone will write say they are worried, and yet are not worried to extent of 2s. 6d., or to payment of a subscription .P.B.A., which would entitle them to a reply by . Now there is a delay of over a week in this case, ., and he would have saved that financial outlay times over. The cause of the trouble is the fish l he is using. This is an exceedingly bad sample, only fit for manurial purposes. He should stop it nce. Give the birds a dose of Epsom salts and entiful supply of fresh green food. The mash is ry inferior one, containing a good deal of husk, is altogether unsuitable.

Intensive (Malmesbury) is worried because his Black Leghorns are feather plucking, and asks for cause and cure. There are 18 of them in a house 10 x 6. Feeding is wet mash at 7.30 a.m., green food at midday, and grain at night. The mash consists largely of house-scraps. Feather plucking is a vicious habit, generally induced by idleness, although sometimes an outbreak may be traced to the presence of insect life. In the case of "Intensive," I suspect idleness to be the cause. The house is not a good type for intensive work, and there is some overcrowding. The best method of stopping it would be to smear the birds' feathers with some nauseous compound, such as lard and bitter aloes; a change in the method of feeding is desirable. The day should begin with a small feed of grain in deep litter, the mash given about eleven o'clock, a small feed of grain again about two, and the final feed about half-an-hour before perching. I should always prefer dry mash feeding with intensive birds; great care should be taken to keep them as active as possible.

Beginner (Roehampton) wants a mash for chicks from eight weeks old until the laying stage. He also asks how he can tell which of the pullets are likely to prove the best layers. In reply to his first question, the following is a good mash until the chicks are five months old; it should be changed to a laying mash about the beginning of September:—Bran, 2lbs.; middlings, 4lbs., alfalfa, 1lb.; ground oats, 1½lbs.; maize meal, ½lb.; meat and bone or fish meal, ½lb. It is early at present to say which will be the best layers, but the best pullets almost invariably feather most quickly on the back; they will be the most active and vigorous. Those chicks which he says are pale, and whose "beaks appear too long" will never grow to healthy profitable maturity. They are probably tubercular. He would be well advised to kill them. If he wishes to doctor them, give two teaspoonfuls of cod liver oil to the pound of mash, one meal of bread and milk a day, and plenty of fresh green food.

Crop (Cheshire) has several pullets which are, from what he tells me, suffering from sour crop. His feeding, which includes a big percentage of cooked vegetables, is the cause of the trouble, and when he says that he finds it difficult to get it into the "crumbly moist" condition I write of, we must infer that he is feeding it "sloppy." This would cause the digestive juices to become dilute and the tissues flabby. I do not wish to imply that the cooked vegetables are the cause of the trouble, it is the sloppy mash. To treat, hold the birds upside down, gently knead the crop, forcing the fluid out through the mouth, give bi-carbonate of soda, mix one teaspoonful with eight of water, and give the birds two teaspoonfuls of this twice daily; they should be fed sparingly. If the proportion of vegetable matter in the mash is reduced there will be no difficulty in getting that crumbly moist condition.

Lankisheer (Rochdale) is anxious to know what what effect hen oil has on the shell of the egg, and whether any substitute has been found. This question has been answered many times. There is no reason to believe that hen oil has any effect on the shell of the egg, or that it directly affects the membrane. It has been argued by some people that it softens it. The only probable effect is that it checks evaporation of moisture. There is less evaporation under the sitting hen than in the incubator, while there is a greater circulation of air. No substitute has been found, and all attempts to use fats, oils, or anything of the kind have proved failures, and bad ones at that, for the simple reason that they have closed the pores in the shell, and the embryo has failed to develop for want of oxygen.

E. S. B. (Weston-super-Mare) writes that last February he ordered a dozen day-old pullets for delivery end of March. The breeder replied that he had booked them for 8th April. My correspondent said that he had no objection to that date if they were sent off on the evening of the 8th, as the following date would not do on account of the holiday. The breeder agreed to this, but in spite of that he did not despatch them until the 9th. They arrived at the station on Good Friday afternoon in a very exhausted condition—one had been trampled to death, and most of them were gasping for breath. To cut a long story short my correspondent has lost all but four. The report on the bodies sent for post-mortem examination is to the effect that they were infected with Coccidiosis and Secondary Pneumonia. He thinks the surviving chicks may be reared, as they are getting stronger and brighter. The point he wishes to know is should he do so? Utility strain is alleged to be good, but these four chicks are now costing him about 9s. each as day-olds, but he asks if I think it wise to rear them for table eggs. If these chicks are really infected with Coccidiosis, I do not think it wise to rear them at all, for they will but spread the infection in the droppings. On the other hand, if they were infected with Coccidiosis, I do not think they would be any brighter. My experience is that once a chick is infected at this age it is doomed, and I should not care to run the risk. The breeder, of course, was altogether wrong. He broke his contract, and my correspondent should have refused to accept delivery of the chicks.

RESPONSIBILITY OF DOG OWNERS.

Publicity has already been given to the fact that in a recent case, where a large number of chickens were killed by a greyhound, and the poultry-keeper obtained a judgment against the dog owner in the local County Court, this decision has been reversed in the High Court of Justice. As a consequence it would appear that poultry-keepers are not protected as are breeders of other animals, and that it will be necessary to obtain an amendment of the law.

At the last meeting of the National Poultry Council it was resolved that an enquiry should be made into this matter, and steps be taken if necessary to obtain such change.

In the meantime it is desirable that all information possible should be obtained as to cases where dogs worried poultry, whether upon general farms or in the case of other poultry-keepers. A request is made, therefore, that all such cases should be reported as soon as possible to the General Secretary, National Poultry Council, 20-21, Essex Street, Strand, London, W.C.2.

Poultry Foods,

THEIR NATURE, COMPOSITION, EXAMINATION
AND ADULTERATION.

By HAROLD T. CRANFIELD.

Advisory Chemist to the Midland Agricultural and Dair
College. Late Official Agricultural Analyst to th
Counties of Notts. and Lindsey (Lincs.). Member of th
Society of Public Analysts.

Continued.

2. BYE-PRODUCTS OF OIL EXTRACTIO

Earthnut Meal.—The Earthnut (also nar
groundnut, peanut and monkey nut) is a legu
which grows in tropical countries. The see
which are enclosed in a pod, are very rich in
and the extraction of the oil has been, for m
years, an industry of considerable importance
Marseilles. The oil—arachis oil—is of h
quality, and is largely used in margarine ma
facture and for culinary purposes. The resi
possesses considerable feeding value, and is mo
over very palatable. There are two types of c
and meal on the market—decorticated, which
prepared from the seeds only, and undecorticat
which contains in addition the pod. The form
is much richer in feeding constituents than
latter, and contains a very much lower percent
of woody fibre. The two types are easily
tinguishable once samples of both have b
examined side by side. Frequently earthnut me
contain appreciable amounts of sand. Such s
ples are usually of the undecorticated variety.

Soya Meal.—The soya (soy) bean is a legu
indigenous to China, and its cultivation has spr
in recent years to many eastern countries and
the sub-tropical States of America. Large qu
tities are imported by England for oil extracti
and the residues form a valuable feeding st
The solvent extraction process is used in so
mills, and in consequence an extracted meal c
taining less than 1½ per cent. oil is on the mark
The ordinary meal is light coloured, while
extracted soya meal is of a much darker bro
colour. Soya meals are usually quite pure.

Both Earthnut Meal and Soya Meal must
used with great care in poultry feeding, since t
are very rich in protein. Excess of vegetable p
tein fed to poultry is liable to cause trouble.

Palm Kernel Meal.—This residue from the
extraction of palm kernels is a material of g
importance on our foodstuff market at the pres
time. Ten or twelve years ago palm kernel c
and meal were almost unknown in this coun
the bulk of the kernels, in pre-war days, be
sent to Germany and Holland. During the G
War, palm kernels were diverted to England,
their extraction has since become an industry
considerable importance. Two types of meal
sold—palm kernel cake meal, containing 6
cent. oil, and palm kernel meal (extracted), c

ning 1½ per cent. oil. Both are useful foods, derately rich in protein. Adulteration is rare.

3. FOODS OF ANIMAL ORIGIN.

he use of small quantities of highly nitrogenous ds of animal origin, in the rations of laying ds, has become popular in recent years. Three terials are commonly used for this purpose, : Fish Meal, Meat Meal and Blood Meal.

ish Meal.—The drying of fish refuse for manure been a common industry in the vicinity of ing ports for many years, but a later develop- nt has been the preparation of feeding fish al. While any type of fish or fish refuse is d in the manure works, only white fish, i.e., other than the herring family, is suitable for ding fish meal manufacture. Herring oil is an ectionable substance, and its presence in a meal ld tend to develop a taint in the eggs. Since ring contains a much higher percentage of oil n white fish, a **maximum** guarantee of oil uld always be insisted upon when buying fish al. Common salt is another undesirable con- uent, and no meal should be purchased which tains more than 3 per cent. of this substance. h meal, apart from its high protein content, is in phosphate of lime, a most necessary terial for egg production. With the exception oil and salt, little adulteration is likely. It is to note that colour is no criterion of quality.

eat Meal.—This product of meat canning and at extract works is a highly nitrogenous food, ensively used in poultry feeding. Meat meal ies very much in composition, depending on class of material from which it is manu- tured. Total protein may vary from 40 to 65 cent. fat, and oil from 2½ to 25 per cent., and eral matter from 10 to 25 per cent. Naturally eal low in fat content is most desirable, and s also well to remember that high mineral ter (due to a large proportion of bone) is ociated with a comparatively low protein con- t. It is very essential that this foodstuff should ought from a reputable firm, and a guarantee il and albuminoids insisted upon. In cases of bt an analysis should be made.

lood Meal.—Dried blood is a product of ttoirs and meat canning works. The fresh od is dried in vacuo and subsequently ground. od meal contains more protein than any other mercial poultry food, and great care must be rcised in using it. 80 to 85 per cent. albu- oids is usually found on analysis, the remainder sisting of moisture, a little fat and mineral ter. It is very digestible.

one Meal.—Feeding bone meal usually con- s of green bone ground, although bone meal pared from degreased bones and steamed bone r are nowadays used for feeding. Besides a sical action in the crop, bones contain a con- rable amount of nutriment, but unless ground derately finely, a large proportion will escape digestion. Bones vary considerably in composition, but average samples will be found to contain about 60 per cent. mineral matter (largely phosphate of lime), 30 to 35 per cent. organic matter (largely ossein—a nitrogenous material of a gelatinous nature—with some fat), and the remainder water. Adulteration—unless the meal is finely ground—is easily detected.

Dairy Products.—The bye-products of butter and cheese manufacture are utilised to some extent in poultry feeding, particularly in fattening. Separated milk, butter milk and whey are the chief bye-products, and as these are usually bought in the immediate vicinity of the poultry farm adulteration is unlikely. Care, however, should be taken that common salt is not present to any extent. Poultry are very susceptible to salt, and poisoning is rather common.

4. MISCELLANEOUS FOODS.

Dried Yeast.—This bye-product of breweries has been on the market for some years as a cattle and poultry food. It is prepared in the form of dark brown flakes which break down to a cream on mixing with water. Dried yeast possesses a rather peculiar flavour, but this is completely masked when mixed in a ration. It is essentially a protein food, containing about 50 per cent. albuminoids and less than 1 per cent. oil.

Clover Cob and Meal.—Dried and ground clover cobs and clover hay are sold as food for poultry. These meals do not act as substitutes for green food, but form useful constituents of poultry rations, especially when bulk is needed to dilute more concentrated meals. Careful examination of clover meals must be made to ascertain the proportion of stem present. This portion of the clover plant possesses a high fibre content, and consequently lowers the food value of the meal.

Dried Sugar Beet Slices.—With the advent of the sugar beet industry in this country, a comparatively new feeding stuff has appeared on the market in the form of the dried beet residue from the extraction of the sugar. This material possesses considerable feeding value, and should prove a useful addition to the list of poultry foods. Compared with other foods, dried sugar beet slices has a total feeding value about equal to that of dried grains, although its composition is somewhat different. Albuminoids range around 8 per cent., while the oil is usually less than 1 per cent. Carbohydrates, however, are high, 50 to 60 per cent., and the woody fibre content is generally above 12 per cent. Care must be taken in keeping this foodstuff in a dry place, as it is inclined to absorb moisture.

5. PROPRIETARY POULTRY FOODS.

The purchase and use of mixed poultry meals, the composition of which is not disclosed, are questions which have received some considerable attention. Every agricultural and poultry paper contains advertisements of this class of foodstuff, many of which are claimed by the sellers to produce phenomenal results. To the feeding expert and agricultural analyst there is no secret regarding these compound meals, and we can rest assured that none of them possesses any virtue beyond that which is contained in the food constituents of the mixture. Many of the poultry meals sold by reputable firms give quite good results, but the poultry farmer should realise that just as good results could be obtained by a well-balanced mixture of simple foodstuffs made up on the farm, and in the majority of cases at considerably less cost. Where such proprietary foods differ from the home-made mixture is in the cost per food unit. In some cases these meals are a convenient and profitable medium whereby merchants are able to utilise quantities of cheap foodstuffs, which, although they may possess some feeding value, are not sufficiently attractive to be bought in the pure state by the feeder. Economical poultry farming does not allow of the purchase of proprietary foods.

(To be Continued.)

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES.

A Council Meeting will be held in the Master Builders' Rooms, Mount Street, Preston, on Saturday, May 9th, 1925. Chair to be taken at 3 p.m.

AGENDA.

1. Minutes of last Council Meeting. 2. Correspondence. 3. National Poultry Council Meeting held at Chester (Delegates' Report). 4. Nomination of Officers for National Poultry Council for 1925-26. 5. Accounts. 6. Sub-Committees Reports:—(a) Laying Test. (b) Finance. (c) Educational and Propaganda. (d) Show. 7. Any other business.

The following Sub-Committees are requested to meet at the same place at 2 p.m :—

Educational and Propaganda: Messrs. W. Grove, T. Edmundson, J. Whalley, Rev. A. J. King, D. Braithwaite, C. Longbottom, W A. Hall.

Laying Test: Messrs. W. Hamnett, H. Hayes, G. E. Leigh, W. Martindale, G. B. Tootall, C. Birtwell.

Finance: Messrs. J. P. Willacy, F. Thompson, A. D. Walton, J. Hall, W. Kay, A. Grime.

Secretaries would greatly oblige by remitting affiliation fees for 1925 as early as possible.

E. COLLIER, Organising Secretary.

NATIONAL POULTRY EXAMINATION BOARD.

Arrangements have been made that the Preliminary Examination for Candidates intending to sit for the final examination in September next will be held in the latter part of June. Candidates who desire to sit for the Preliminary Examination must make application before the 1st of June to the Secretary, National Poultry Examination Board, 20-21, Essex Street, Strand, London, W.C.2, when information would be issued as to the place and dates of such preliminary examination.

Bees.

By E. W. D. MADOC.

BUYING BEES.

April and May are the best months in which purchase bees, because the dangers and expe of wintering are over and the bees are on threshold of their summer harvest.

When a strong established stock is obtained actual date during these two months on which is secured is unimportant provided it arrives bef the main honey flow has begun. On the ot hand, a swarm at the end of April or early in M is generally far more valuable than a late May June swarm, because a swarm requires five or weeks to establish its brood nest and build up the strength of a good established stock.

One of the best ways of starting is to buy early swarm from a neighbouring bee-keeper, membering that a good big swarm is worth seve small ones; this swarm should cost from 10s. £1, according to its size and earliness from so side-line bee-keeper, but a regular bee farmer dealer will generally want considerably more.

On account of the long time required by a swa to build up, the yield of honey in the first years very variable, according to whether the honey fl comes early or late, and for this reason a st offers better chances of securing a surpl although it costs much more. In valuing a st of bees, the condition and number of the com the amount of honey present, and the number a quality of bees must all be taken into conside tion. The number of bees and the amount of hon and brood are governed largely by the time of ye at which the examination of the bees is made, at any time it is a case of the more the bett The combs should be straight, and in wir frames, and contain very little drone comb. Th age is unimportant, although reasonably combs are superior to new ones, in that they tougher and warmer to the bees. A stock of go Italians is always worth more than mongrels, a if a stock of mongrels or otherwise inferior b is bought, a young queen of good stock should introduced as soon as possible.

While the quality of the bees is not of very gr importance when purchasing a stock because the ease with which the character of the sto may be changed by requeening, it is of the utm importance that this requeening should be do as it may make all the difference between a go yield and nothing at all.

Sometimes a local bee-keeper wants to sell stock of bees with the hive, but if the hive is n similar and interchangeable with those you ha already it is not advisable to buy it, even though is offered very cheaply. In this connection I m point out that in this country there are not o different types of hive, but different makes of t

(Continued at Foot of Previous Column.)

same type—that is to say, that while the W.B.C. hive of one maker appears to be exactly similar to that of another, there is generally sufficient difference in their dimensions to prevent their being interchangeable. Apparently the makers only object in making this idiotic difference is to hold their customers because the latter cannot get hives of identical dimensions elsewhere.

Angora Rabbit Wool Farming. III.

By **THE LADY RACHEL BYNG.**

The first plucking of an Angora's wool takes place six weeks of age, the second at three months, and e third at six months. After this age the wool ould be plucked every three months, as soon as it is e, i.e., comes away easily when pulled between e fingers.

Though but a small amount of wool is harvested at e first two pluckings, it is essential that they should efficiently and skilfully executed, as, upon the oroughness of these first pluckings depends the ultiate harvest of wool.

At the third plucking the animal's annual yield n usually be gauged.

If the pluckings are not done at the auspicious ment, wool is wasted through matting, and the wth of the next harvest greatly impeded.

There is no doubt that the wool of some Angoras ts far less than others.

"ORION," the property of LADY RACHEL BYNG.
ed 10 months, and weighing then 8 lb. 6 oz.; at 2 years he ghs 9 lb. 8 oz. He was brought up on goat's milk, and gives over 1 lb. of wool annually.

y careful selection and mating doubtless a strain ld be provided that would require less grooming n the present wool-producing Angora.

he short, coarse French Angora Coats are liable matting in a lesser degree than the English long silky-coated Angoras, but among the latter are asionally to be found specimens from babyhood upwards whose coats are always free from mats. These are the ones that should be bred from, for a strain of Angoras that needed the minimum amount of brushing would be indeed a time-saving and money-making strain, if the quality of wool could be preserved at the same time. These specimens are usually found in the small litters, and from strong parents.

Bucks and Does should only be bred from when in tip-top condition. No Buck should be used more than twice a week, and, if between eight and twelve months of age, once a week is ample.

A maiden doe should not be bred from under eight months of age.

A good three months from the birth of her litter should elapse before the doe is mated for her second litter.

The babies should be weaned when two months old. The doe is then clipped, and has four weeks in which to rest, and she can grow a new coat during that time and the weeks following her mating.

One of the surest ways to ensure the beautiful silky and bright pure white, so appreciated by the spinners, is to give the doe and babies a plentiful supply of bread and milk. This feed should be continued until the babies are, at any rate, three months of age, preferably till they are adult at six months of age.

Unless the babies are well fed during their growing months, a good wool harvest cannot be expected.

Goat's milk is the best of all . Failing that, cow's milk; skimmed milk made really warm with hot water is very good, but if neither goat's nor cow's milk is obtainable, any of the best milk powders make a good substitute. Give as much bread and milk as can be finished at a time, and as often as you can afford it. It is always best with babies to feed often, and a little at a time.

The Lady Rachel Byng will be pleased to give further information if stamped addressed envelope is enclosed.

THE HANTS COUNTY LAYING TRIALS.

Report ending 28th March, 1925.

Total Eggs to Date.

Section A.—A. F. C. Holdaway (W.L.), 2870; H. R. Hunter (W.L.), 2856; A. F. C. Holdaway (W.L.), 2691; Capt. A. M. Spencer (W.L.), 2452; Mr. R. MacKenzie (W.L.), 2373; Mr. S Wilkinson (W.L.), 2180.

Section B.—Mrs. Drew (Buff R., Util), 3398; Mr. R. MacKenzie (W.W.), 2610; Capt D. W. Gunston (W.W.), 2428; Capt. D. W. Gunston (Pen 1, W.W.), 2406; Mr. J. R. Thompson (W.W.), 2391; Mr. S. Wilkinson (W.W.), 2304.

It is regretted that through the illness of the late Manageress of the Trials, over five weeks ago, and her later resignation, there has been delay in publishing these reports. Matters have been made more difficult by the illness of another of the poultry staff. Under the circumstances the reports have been got out at the earliest possible moment, and I can only express my regret at any inconvenience or loss that may have occurred to competitors.

L G. TROUP, Principal, Farm Institute.

GLAMORGAN COUNTY EGG LAYING TRIALS, 1924-25.

From 19th October, 1924—22nd August, 1925.

Report for Fifth Month.

Light Breeds.—J. Joshua, Tondu (W.L.), 194 pts.; R. J. Evans, Abertridwr (W.L.), 160; Mrs. E. H. Parry, Llantwit Major (W.L.), 142; G. Bunday, Ton Petre (W.L.), 116; W. H. C. Llewellyn, Bridgend (W.L.), 133; Howell and Phillips, Barry (W.L.), 115.

Heavy Breeds.—J. Joshua, Tondu (R.I.R.), 300 pts; R. J. Evans, Abertridwr (R.I.R.), 260; Harrop Griffiths and Hall, Bridgend (R.I.R.), 253; A. Evans, Barry (R.I.R.), 263; J. Joshua, Tondu (W.W.), 240; J. R. Thomas, Barry (R.I.R.), 205.

C. F. DUNKLEY, Manager.

Notes on Utility Ducks.

By A. HAROLD PAINE.

Many experienced breeders maintain that ducks' eggs may be hatched with equally good results in the incubator or under the hen. This week, however, I will deal with natural hatching only.

The best sitting hens are those of medium size and of heavy breed. I have generally used Rhode Island Reds, and under them have hatched with excellent results. A large coop or sitting box is desirable, and the best type is one divided in the centre, by a slatted partition into two compartments. The roof should have hinged shutters which button, and the front should be fitted with a sliding shutter with glass panel. The first half of the coop should have a movable wooden floor, but this does not come into use until the ducklings have attained a reasonable size. It is advisable for the whole bottom of the coop to be wired with small mesh wire netting, which prevents rats and other vermin entering. The bottom of the nest box should be filled to a height of about one inch with earth, adding more earth at the corners to make it saucer shape, then it should be beaten down firmly and lined with a little clean hay. The number of eggs given depends on the size of the hen, and may be from twelve to fifteen. The hen should be examined most carefully before the eggs are put under her, as it is most unlikely that she will be free from insect pests of some kind or other, and she should be thoroughly and liberally dusted with some good insect or disinfectant powder. The best way is to hold her over a large sheet of paper and dust her thoroughly and freely, any surplus powder will fall on to the paper and can be replaced in the tin for use later. It will be all the better if this is done two days running, and should the hen seem at all uneasy during the sitting period another dusting may be given at the end of a week or two. The eggs should be tested about the tenth and twentieth days, removing those that are infertile or addled, and if during the sitting period the eggs get fouled at any time they should be carefully washed with warm water, preferably when the hen is having her daily ten minutes off, and replaced carefully and quickly. If the front of the coop is left open the hen is then able to leave the eggs when she feels disposed, or she should be taken off for about ten minutes daily for obvious reasons. The best food for the sitting hen is finely kibbled maize, and see that she has always an ample supply of fresh water. The coop should be securely closed up at night. If the weather is very warm the eggs may be liberally sprinkled or sprayed with water of a temperature of about 105 degrees, and during an exceptionally dry time half a bucket of water should be poured on the ground round the coop. On the 28th day the ducklings should make their appearance, and they should have no food any kind until they are at least thirty-six hou old. They should have fresh water from the firs however. The best food for the first week is sta bread, preferably brown or wholemeal, which ha been soaked in slightly warm milk, or milk an water. Let the bread absorb as much milk a possible, and then feed in a crumbly, and n sloppy, state. Give as much of this every thre hours as the youngsters will clean up in about te minutes, and what is left over should be remove immediately. It is important that no stale foo of any kind should ever be before the youngsters At the end of the first week four feeds a day the following mash may be given, all parts b weight :—6 best middlings, 3 maize germ mea one best meat meal, one fish meal (impregnate with cod liver oil), one separated dried milk, 3 fin biscuit meal, 3 Sussex ground oats, one alfalfa half dried yeast. Moisten these to a crumbl state with hot—not boiling—water. Feed agai as much as they will clean up in ten minutes, th rest being removed. To save time, it is advisabl to mix up each morning in a box or tin sufficien for the day. The mash may be fed just slightl warm, never hot. If some of these ingredients ar unobtainable, a simpler mash is as follows:— 3 best middlings, one Sussex ground oats, one fin biscuit meal, quarter best fish or meat meal. A three or four weeks old the fish or meat meal i the latter mash may be increased to half part Fine grit or shell should be available always Green food should be regularly supplied from th end of the first week, and should consist of finel chopped dandelion, chickweed, or lettuce, or whatever may be available. It is a good plan to mi with the mash once or twice a week very finel chopped spring onions, giving both the bulb an the green part.

MIRFIELD AND DISTRICT POULTRY-KEEPERS' ASSOCIATIO LAYING TRIALS.

Sixth Monthly Period.

The sixth monthly period of the laying trials, organised by th above Association, closed on Sunday, 12th April, under th management of Mr W. H. Jackson.

The health of the flock is good. There have been two death during the month—one died from heart failure, caused by bein overfat, and the other from broken egg in the oviduct.

SUMMARY OF LEADING PENS.

White Leghorns, Pen Section (Three Birds).—Mr. W. Horsley 204 pts.; Mr. N. Firth, 199; Messrs. Ledgard and Brown, 194.

Any Other Variety (Two Birds).—Davey and Sons, 128; Messrs Ledgard and Brown, 82; Mr. H. Poole, 78.

White Wyandottes, Pen Section (Three Birds).—Mr R. Scott 214; Mr. E. G. V. Ermen, 200; Messrs. Ledgard and Brown, 189.

Any Other Variety, Heavy Pen (Three Birds).—Mr. W. Horsley 318; Mr. P. Furness, 249; Mr. T. E. Burnett, 207.

White Leghorn (Single Bird).—Mr. A Blackburn, 84; Mr. W Horsley, 84; Messrs. Ledgard and Brown, 80.

Any Other Variety, Light (Single Bird).—Sykes Bros., 70; Mr F. Elmour, 55; Messrs. Ledgard and Brown, 40.

White Wyandotte (Single Bird).—Mr. C Whiteley, 94; Mr. A. Blackburn. 93; Mr. H. Crowther, 89.

Any Other Variety, Heavy (Single Bird).—Mr. A. Sykes, 70; Mr. E. Saxton, 70; Mr. W. Saxton, 69.

The Intensive System

By J. EVERARD.

The two articles in our Register and various ferences in "Eggs" tend to show that there is possibility of a reviving interest in Intensive ultry-keeping.

How far the system was to blame in the many smal failures in the early days of the boom, we all never know. Would those who rushed into have succeeded on Extensive or Semi-Intensive es? In many cases they had no previous knowlge or experience in poultry-keeping, and nothing t failure was to be expected. The system was so taken up by many enthusiastic and expericed poultry-keepers. Why did they let it drop? ring the time that they gave it a trial, what l they find were the special things that caused to be unsuccessful as a paying venture?

Before going further I may as well say that I not run a commercial egg farm, or cater for sale of sittings and stock birds. The number birds kept is usually about 100, principally the needs of a large establishment. But I nage to sell sufficient new-laid eggs to pay the d bill, and thus supply the house free with eggs d table birds. Neither are the birds on strict ensive lines, but more on Mr. Newman's sugsted plan of being kept enclosed during the nter months and inclement weather. With these missions my experiences can be taken for what y are worth.

rom the first it seemed to me that some modiations of the details as laid down in those racy icles on the Intensive System by Mr. Meech in infancy of "Eggs" would be desirable before ould become an enthusiastic intensivist. This s in 1913, when the boom first started. At it time it was my privilege to sit on the fence d watch developments. The actual carpentering rt was of more interest to me then.

he first part of the house was 18 feet long by feet deep, with a double row of canvas-covered itters in front. It had a division in the centre, king two sections 9 feet by 14 ft. Later it w 30 feet by 14 feet on one end and 20 feet by feet at the other end.

he principal objections to an economical work seemed to be: (1) An abundant supply of fresh enstuff; (2) scratching litter; (3) size of flocks.

f the three objections I think the abundant ply of fresh green food appealed least to me, ecially when our Sussex weather had to be en into consideration, so that when (in 1915) care of the birds was passed on to me I decided give no greenstuff in a raw state at all, and to y entirely on a cooked mash for the supply of getable matter.

It may be argued that raw vegetable matter is a bird's natural food. But we are not keeping birds in a natural way, especially on intensive lines, and it becomes a question of how far we can go from Nature with good results, instead of how close we must keep to it.

When greenstuff is given raw it must be done daily, and waste parts cleaned out—double labour. But when cooked, sufficient can be boiled up to last for three or four days, and mixed with the mash as required, also all the leaf will be consumed, and during shortage of greenstuff, or very bad weather, other vegetable matter, such as swedes and occasionally potatoes, may be used.

I am not in any way condemning the use of fresh greenstuff, but feel strongly that the continual insistence of an abundant supply of fresh greenstuff as absolutely necessary deters many people, backyarders for example, from keeping a few fowls.

My young chicks have to be reared in fostermothers with a boarded floor, covered run attached, on account of rats, magpies, and other vermin, until such dangers are passed. Their supply of greenstuff consists of clover meal in their dry mash. The present stock for eight or nine generations have all been bred and reared on the above plan.

The pullets have to pass the S.P.B.A. tests to be used as breeders, and a fair percentage reach the 200-egg mark. I hope later to give tables of laying in the third and fourth year of some of these birds.

The second objection was the scratch litter. I used to watch my confrere in his attempts to carry out to the letter the instructions in those first numbers of "Eggs." To wit, an inch or more of dust, dry earth or sand to cover the floor. He would even go to the labour of drying it in the oven. Now Sussex soil is as good as a bunch of seaweed for attracting moisture, and the less there is of it in an intensive house, the drier the floor is likely to be.

Straw looks very nice on the floor when it is fresh, but at 5s. cwt. it is rather a big item in working expenses. I use the coarsest and roughest hay I can get. It is put through the chaff cutter in the long gear, and stored away in bags until required.

Experience and observation has convinced me that the scratch litter is more likely to get damp when it is freshly put in, consequently the earlier the houses can be cleaned out in the autumn the better. We like to wait until the birds have finished moulting, so as not to have feathers about the houses all the winter, but it is better not to wait.

For some reason it was not convenient to clean out one house last autumn, and that particular house has kept quite dry all the winter, and some others had to be freely sprinkled with lime on the floor so as to keep the litter at all dry.

I must retract, to a certain extent, my statement that no fresh greenstuff is given to the birds. During the spring and summer months the lawn mowings are put in the houses. The birds certainly eat a lot of it, but I look on the use of it as a great help in the houses in keeping the houses cool and fresh, and preventing dust rising, quite as much as a food supply.

It is in the using up of such things which might otherwise be wasted that some of the expenses on a poultry plant can be cut down. Also, a good source of income can be derived from the proper care of the manure when the houses are cleaned.

In the letters which frequently appear in "Eggs" on dropping boards versus pits, there is one point against the latter which has not been mentioned. Hens will often lay their eggs in the pits in preference to the proper nest boxes. This must often be an overlooked cause of tainted eggs. One further point in favour of dropping boards. The fumes rising nightly from an accumulation of a week, and possibly a month, in the pits, must be greater than from one night's droppings on the boards.

SIZE OF FLOCKS.—Whatever may be found to be the most economical unit for fowls kept on any other system, there seems to be little doubt that it is the smaller the better for intensive work. Vices, such as egg-eating, feather-plucking, etc., are much more likely to break out with closely confined birds, and with small flocks the spreading of such vices is limited.

This does not necessarily mean a number of small houses. The whole concern can be under one roof with partitions at stated intervals, boarded up from the floor to the height of about three feet and the rest wire netting, also a wire-covered gate in each partition. Originally these partitions in my houses were nine feet apart, and each section would accommodate thirty birds, but as I wanted to use some of the sections as breeding pens I decided to reduce the width to six feet. This would still allow floor space for twenty, and where there would be anything like that number, they would be pullets being trap-nested. The breeding pens would contain considerably less numbers.

It has become a sort of Glorified Philo House—ten small houses under one roof, and no amount of persuasion will induce me to keep fowls under other conditions.

A piece of ground about thirty feet wide, five feet of this is paved with bricks for a passage way in front of the houses, is all the ground given to them. This is divided in four, and has to serve for two or three sections of the house, according to width. So it is evident that the birds, even in fine weather, can only be out for a few hours on alternate days. Alternate pens are kept vacant to prevent the cocks fighting through the wire netting.

The breeds kept are White Leghorns, White Wyandottes, and Rhode Island Reds. I find the Rhodes and Wyandottes do quite as well as Leghorns for intensive work. I have one Wyandott that laid 224 in pullet year, 183 in second yea and 183 and reared a brood of chicks in thir year, and has laid 85 to date in her fourth yea This has been a most difficult bird to breed from but after mating her to three different male bird I have at last succeeded in getting a few chick

A second laid 228 first year, 179 second yea but fell off in third year to 66.

Another bird now in her third year has laid ove 70 since January 1st, and is mated to a fourtl year cock. Every egg incubated from this bir has been fertile, and nearly all of them hatche out. My highest pullet year score was 278, bu one exceptional bird went on laying for sixtee months, and gave 314 in that time.

Amongst the Leghorns I have three birds no in their fourth year. They have laid to dat (April 20th):—No. 5, 214 first year, 178 secon 165 third, 46 fourth; No. 6, 215 first year, 17 second, 145 third, 32 fourth; No. 8, 137 first yea 172 second, 158 third, 42 fourth.

The above records are sufficient to show tha many valuable birds are killed off at end of the second laying season. No. 8 Leghorn was lat hatched, and did not start laying until February She was probably laying well in the autumn, whe the unprofitable pullets are generally killed off, an so got a lease of life for another year.

THE LANCASHIRE UTILITY POULTRY SOCIETY.

INTERNATIONAL EGG-LAYING TEST, 1924-5.

Sixth Month Report—March 7th to April 3rd).

The report for the sixth period (March 7th to April 3rd) sho that high average rate of production has been maintained wi all breeds, and the birds are in good health. Quite a host birds have laid 20 eggs and over for the month.

Broodiness is beginning to show itself. Below is a list of t leading pens and individual birds for the month in the numb of eggs laid.

SUMMARY OF LEADING PENS.

Figures are Eggs and Points to date respectively.

Large Breeders. Section 1.—W. Crabtree, Twiston, 1108, 112 F. Snowden, Cowling, 964, 1018; R. Marshall, Forton, 1056, 1022.

Large Breeders. Section 2.—J. R. Hull, Thornton-le-Fylde, 9 1059; F. Harvey, Bretherton, 1004, 998; Mrs. M. Molloy, Crumli 949, 974.

Large Breeders. Section 3.—F. R. Welch, Bewdley, 957, 97 W. Hamnett, Blackpool, 922, 921; Miss H. Bell, Welwyn, 807, 835.

Large Breeders. Section 4.—F Snowden, Cowling, 936, 994; Rodwell, Nelson, 952, 1002; J. Thompson, Shrewsbury, 989, 992.

Large Breeders. Section 5.—S. Street-Porter, Ely, 955, 1004; Rodwell, Nelson, 1038, 1011; G. B. Metcalfe, Lechlade, 905, 920.

Small Breeders. Section 6.—J. W. Lodge, Holmfirth, 551, 56 Dr J. E. Helm, Newchurch-in R., 535, 576; P. H. Sephton, Ruffor 524, 540.

Small Breeders. Section 7.—C. C. Humber, Hoole, 538, 524; Lumb, Hebden Bridge, 517, 522; W. Lyon, Holmeswood, 464, 485.

Small Breeders. Section 8.—T. Rossall-Sandford, Shrewsbur 554, 579; Col. S. Sandbach, Abergele, 368, 368; W. J. King, Leamin ton Spa, 300, 290

Small Breeders. Section 9.—F. F. Fieher, Tarleton, 588, 619; W. Sutcliffe, Hebden Bridge, 560, 543; W. Machine, Huntingto 510, 528.

Small Breeders. Section 10.—W. A. Lansley, Whitchurch, 50 565; O. Rawlinson, Waverton, 469, 469; J. Stuart, Garstang, 444, 45

Small Breeders. Section 11.—Guy Mart, New Longton, 465, 45 Elizabeth Priestley, Oxford, 456, 448; Capt. J. T. M. Mee, Gresse hall, 378, 391.

Single Bird. Section 12. Heavy.—J. R. Hull, Thornton-le-Fyld 119, 135; J. Rainford, Penwortham, 114, 129; S. Marquis, Gree halgh, 109, 115.

Single Bird. Section 13. Light.—S. J. Parsons, Musbury, 1 123; W. Rogers, Market Drayton, 119, 110; F. Snowden, Cowlin 93, 106.

Novice Breeders. Section 14. Heavy.—Miss Walker, Hothersa 494, 515; W. Ellwood, Galgate, 440, 342; R. Hargreaves, Barto 458, 433.

Novice Breeders. Section 15. Light.—W. Ellwood, Galgat 535, 532; S Marquis, Greenhalgh, 461, 482; R. Bradley, Hutto 486, 478.

ANSWERS TO QUERIES—Continued.

P. J. S. (Bolton) sends sample of bran at 9s. 9d. wt., which is of very moderate quality. Thirds t 9s. 6d., which are above the average, meat neal at 17s. 6d., which is good. Maize meal atisfactory, and ground oats at 13s. 6d., while ot "Sussex" ground, would answer the same urpose, and are excellent value for the money. "P. J. S." will be wise to get a better sample of ran. Being unable to obtain meat and bone meal cally, he wishes to know if he could buy half of ach separately and mix them, as he could buy the one meal much more cheaply. This course would nswer, but he must not use half and half as he uggests. Eighty per cent. meat meal and twenty one meal would be the correct proportions.

POST-MORTEMS.

C. H. P. The post-mortem examination of the vo W.W. five-weeks-old chicks showed marks of ruising over the loins and haemorrhage into the idneys (which were immediately beneath the bruise narks). Nothing further could be discovered, either acroscopically or miscroscopically, so I presume the ause must be set down as accidental.

C. S. M. The result of the post-mortem examina- on of the three lots of chicks are as follows:—Lot A. owed both the bowel and lung lesions of B.W.D. ot B. pneumonia only (yolk sac unabsorbed). Lot C. eumonia from a broken-down B.W.D. tubercle. his bird had made a valiant attempt at recovery, and ould have survived but for the cause mentioned. A icroscopical examination of each bird's bowel con- nts failed to discover any sort of parasites. The neral conclusion is that B.W.D. is the cause of all ur trouble, and that any efforts at treatment are it futile. It will need a very thorough disinfection premises and equipment to prevent a recurrence of e disease in future hatches, and the question of rriers among the breeding stock has to be considered, until they are eliminated the trouble will go on.

W. B. The chick must have picked up some irritant ison, as the entire digestive tract was in a state of ute inflammation. There were no weeds or plants be found either in the crop or gizzard, so the pre- mption is that the poison was one of the mineral es.

T. C. Rupture of the uterus followed by peritonitis d occurred, and no doubt the excessive fatness the bird was conducive to this accident. I am of opinion that this is what has been the primary se of the other losses, as masses of fat in the lomen, to say nothing of the weakening of the sues of the organs by fatty infiltration, mechanically der the efforts of the uterus to expel the egg. I uld advise handling the birds to discover their con- ion, and to reduce the fat-forming portion of the ion for those found to be excessively fat.

O. The gosling was forwarded to me from Capt. Leeney's Hove address, but I presume the covering letter, etc., has been forwarded to him in South Africa. The post-mortem showed the trouble to be infectious cerebro-spinal meningitis, a disease which is becoming a regular scourge to aquatic birds. The cause is still unknown, and death takes place so rapidly, as a rule, that any form of treatment is useless. As a preventive measure, 10 grains of hypo-sulphite of soda per bird twice daily in the mash, has been favourably reported upon, and is worth a trial.

J. M. R. The post-mortem examination of the Plymouth Rock fowl showed that she was affected with tuberculosis of the liver and tubercular peritonitis. This, of course, is an infectious disease, and this is unlikely to be the only case among the flock. It would be well to isolate this bird's immediate associates, and to kill any that shows any signs of illness immediately, and burn the bodies. The houses should be thoroughly disinfected and exposed to the sun and air as much as possible, and it would be desirable to scrape up the surface of the runs and water well with a solution of chlorinated lime, ¼lb. to the gallon of water.

S. D. Although these chicks were affected with pneumonia, I consider that it was only secondary to an inherent constitutional lack of stamina. They seemed to be a very poorly developed and undersized lot, but the yolk sacs were absorbed, showing that there had been no febrile trouble until the pneumonia germs took advantage of their weakly state. Whether the trouble is due to the stock or to incubator troubles, I am unable to judge from lack of data, but perhaps you can recall something that could account for it during the period of incubation. They might do better if about two per cent. cod liver oil was mixed in the mash, and forty grains of citrate of iron and ammonia were dissolved in each gallon of drinking water.

C. G. H. The post-mortem examination of the two chicks showed that the Black Leghorn was affected with visceral gout, the intestines, liver and heart all being thickly coated with urate deposits, and the pericardium many times its normal thickness. A very remarkable case of perverted body chemistry in so young a bird. The White Leghorn chick's lungs were solid with pneumonia, due I should consider to a chill. You give me no data as to feeding, so I am unable to determine whether the case of gout was due to the food, or whether it was only an individual idiosyncracy.

"Ashmead," Garstang, near Preston.

Dear Sir,—I would like to add my appreciation of your efforts in making "Eggs" so useful and interesting to poultry-keepers. I look forward each week to receiving my copy, and am always sure to find something new and helpful to me. I have long ago ceased to take other poultry papers, as I find that the help one gets from "Eggs" is far more reliable. I wish you, "Eggs" and the S.P.B.A., a very prosperous New Year.

Yours sincerely,
(Signed) W. R. LORD.

Correspondence.

DUCKS AND BACKYARDERS.

To the Editor of "Eggs."

Dear Sir,—There was a statement in Mr. A. H. Paine's article on Utility Ducks in your issue of 15th April, which surprised me very much.

He states :—"Ducks may be kept in the smallest of backyards in cities, or allowed a free range over any amount of land, either condition giving good results so far as egg production is concerned."

My experience with ducks is probably not as extensive as Mr. Paine's, but I have kept them and bred them long enough to realise both their possibilities and their limitations.

Under suitable conditions and with proper management they ought to be very profitable, but under unnatural conditions the reverse is almost certain to be the case.

It is the general farmer who should be encouraged to keep ducks; they are also suitable for certain kinds of fruit farms, and many people with rather more garden than they can utilise should find a few ducks both profitable and beneficial, but I can hardly believe that anyone can seriously advocate keeping them "in the smallest of backyards in cities."

To my mind it is quite wrong, and can only result in injury to the duck, and in the long run to the industry.

Unless ducks can be persuaded to lay throughout the autumn and early winter, they won't pay for their food if this has to be bought, as it has in towns. On free range they will pick up most of their own food if the ground isn't frozen—but to get winter eggs from them when confined in a small run is not an easy matter.

Mr. Paine speaks of "250-egg averages being common, and 300-egg averages not exceptional."

This craze for mere numbers unless checked will soon ruin the utility duck, as it looks like ruining the White Leghorn.

These high records can only be obtained at the sacrifice of stamina.

We shall be getting smaller birds and smaller eggs, and ducklings, instead of being easily reared, will become as susceptible to disease as many chickens are at the present time.

It is wonderful what has been accomplished in recent years with utility ducks, but there must be a limit beyond which it is not safe to go.

Yours faithfully,

F. S. PARDOE.

THE SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

APPLICANTS FOR MEMBERSHIP.

Cairns, Lady Constance, Carnach, Nairn, Scotland.
Tonner, James, Burnside P.F., Gretna, Carlisle.
Brennan, Mrs. F. M., Pangbourne Rectory, near Reading, Ber
Johnson, Albert Edward, 5, Ashes Farm, Wrexham Rd., Chest
Bensley, Cecil W., "Westwood," Kesgrave, near Ipswich, Suff
Pain, T. W., Warnham Court P.F., Warnham, Horsham, Suss
Thomas, J. C., Loose Court, Maidstone, Kent.
Angold, John G., Winterlake, Stoke, Havant, Hants.
Brant, A. G., Glen Rosa, Much Hadham, Herts.
Huth, F. L., Woodreed Farm, Five Ashes, Sussex.
Winter, George, The Green, Steventon, Berks.
Cartan, Mrs. M. M., Toy Poultry Farm, Toy, Co. Down.
Kingzett, J. F., St. Christopher, Malvern Link, Worcs.
Clarke, Mrs. E., Richwell, Bolney, Hayward's Heath, Suss

PRESTON AND DISTRICT UTILITY POULTRY SOCIETY.

Report on the Eighth Annual Six Months' Laying Competitio 9th October, 1924, to 25th March, 1925.

In the Eighth Annual Laying Competition of the ab society a total of 22 pens of four birds each competed. Th were divided into three sections, consisting of:—Section 1: Wh Leghorns, nine pens. Section 2: Any Other Variety, Heavy Bre seven pens. Section 3: White Leghorns, six pens. Total Eg White Wyandottes 3,007. Total Eggs: Any Other Variety, He Breeds, 2,068. Total Eggs: White Leghorns, 1,399. Average: Wh Wyandottes (36 birds), 83.52. Any Other Variety, Heavy Breeds birds, 73.85. White Leghorns (24 birds), 58.25. All breeds: 74.71

Comparisons with the previous years' competitions:—1924-5 birds, 6,474 eggs, 74.71 per bird. 1923-4: 164 birds, 12,285 eggs, per bird. 1922-3: 164 birds, 12,043 eggs, 73.43 birds.

The birds have been in good health, with the exception of which died during the test, but was replaced.

In concluding, we must offer our best thanks to Mr. Rainf for having conducted the test in such an able manner.

Society's Prizes and Awards.—The Society's Silver Challe Cup for Best Pen in Competition: J. T. Finn. Silver Medal Best Pen (White Wyandottes): J. T. Finn. Bronze Medal Second Pen (White Wyandottes): J. R. Dawson. Certificate Merit for Third Pen (White Wyandottes): J. Hodgson. Certific of Merit for Fourth Pen (White Wyandottes): G. H. L. Armstr Silver Medal for Best Pen (A.O.V. Heavy): C. C. Humber. Br Medal for Second Pen (A.O.V. Heavy): J. J. Rawlinson. Certific of Merit for Third Pen (A.O.V. Heavy): A. G. V. Ermen. Certific of Merit for Fourth Pen (A.O.V. Heavy): H. Swarbrick. Si Medal for Best Pen (White Leghorns): A. G. V. Ermen. Br Medal for Second Pen (White Leghorns): R. Moon and S Certificate of Merit for Third Pen (White Leghorns): H. Hol and Sons. Certificate of Merit for Fourth Pen (White Leghor J. C. Barnes. First Class Certificate, awarded to birds that h laid 120 eggs or over. Second Class Certificate, awarded to b that have laid 110 eggs or over.

Special Prizes.—Presidents 'Gold Medal, for Best Pen in C petition.—Winner: J. T. Finn. Silver Medal, given by Mr. Collier for bird laying most First-Grade Eggs (Light Bree Winner: H. Holden and Sons. Silver Medal, given by Messrs A. Ley and Sons, for bird laying most First Grade Eggs (He Breed):—Winner: H. Holden and Sons. Silver Medal, given by J. Rainsford, for Pen of Wyandottes laying most First G Eggs.—Winner: J. T. Finn. Silver Medal, given by Mr. T. Bar for bird gaining most points (Light Breed)— Winner: R. M and Sons. Silver Medal, given by Mr. J. Wrennall, for bird g ing most points (Heavy Breed).—Winner: H. Holden and S £2 2s., Sitting of Eggs, given by Messrs. J. Collinson, Ltd., best pen first four months (Heavy Breed).—Winner: J. T. F £2 2s., Sitting of Eggs, given by Messrs. J. and W. Thom Inskip, for best pen first four months (Light Breed).—Winner Moon and Sons. R.I.R. Cockerel, given by Messrs. R. Moon Sons, for R.I.R. bird laying most First Grade Eggs.—Winner C. Humber.

SUMMARY OF LEADING PENS.

(Figures are Eggs and Points respectively).

Section 1. White Wyandottes.—J. T. Finn, 447, 4240; J Dawson, 380, 3702; J. Hodgson, 389, 3,638; G. H. L. Armstrong, 3440: H. Pinder, 315, 3120; A. G. V. Ermen, 300, 2888.

Section 2. Any Other Variety, Heavy Breeds.—C. C. Hum 397, 3898; J. J. Rawlinson, 312, 3080; A. G. V. Ermen, 314, 3066; Swarbrick, 305, 2958; R. Moon and Son, 316, 2828; Mrs. M. Wal 225, 2232.

Section 3. White Leghorns.—A. G. V. Ermen, 277, 2710; R. M and Son, 283, 2668; H. Holden and Sons, 256, 2552; J. C. Barnes, 1850; E. Collier, 197, 1802; J. Fletcher, 156, 1450.

;ome Fruit-Growing Notes

to help Poultry-Keepers.

By F. W. WHEELER, F.R.H.S.

PRAYING COSTS.—One can safely say that is fairly easy to convince a person that the aying of fruit trees is a good thing, and that vill cure some of the fruit growers' troubles also prevent others, which, if neglected, might l to considerable damage, and even loss of s; but undoubtedly it is more difficult to con- e a person that the good to be gained is in portion to the costs of the work, although it urprising when one does work out the figures, see how low the expenses are, especially if fully judged by the various advantages ined.

aturally, it is most important that the work arried out efficiently and at the right time, rwise no comparisons can be fairly drawn.

aving promised recently to give some costs of ying, I will make good to-day, giving one of own and then quoting from another valuable ce of information. Firstly, the figures I have together are of some lime-sulphur spraying ch I carried out a few weeks ago. For this I l a ten-gallon hand pump machine, moved it on wheels, and requiring an assistant to p while I sprayed. One of my orchards of it 300 trees was selected; these trees were ted eight years ago, and have been rathe rely pruned, so it will give an idea as to the oximate size of trees treated. Reckoning cost of labour at 8½d. the hour and adding of lime-sulphur, bought ready prepared, with addition of Calcium Caseinate—this latter g added to increase its covering power—I find the total cost works out at only ¾d. per tree. ven when three different sprayings are neces- during the year, it will be seen that for the l obtained and possible evils kept in control, o low a figure, it is a wise outlay.

xt, to give some extracts that I have taken a report published of spraying operations at East Malling Research Station. The first I refers to some 656 bush apple trees, nine to years old, sprayed before blossoming against pillars, with Lead Arsenate and Calcium inate. Total amount of wash used 1,400 ns, giving an average wash of 2.1 gallons ree. Labour was 8½d. per hour, and includes aying down of steel pipes and clearing up wards, a system necessary for dealing with areas. All this only brought out cost at oximately) 2d. per tree.

should be noticed that by the average quan- of wash used per tree they were thoroughly hed, and that one quarter of the trees (left for other experimental objects) were unpruned, and another quarter were only lightly pruned (or "regulated"). This will naturally account for a rather larger quantity of material being used.

Other interesting figures are a winter washing with caustic soda, costing approximately 2¾d. per tree, and to quote one other. A plot of 195 half-standard plum trees, five to seven years, including a row of unpruned specimen trees, dense in growth and foliage, just before blossoming, and sprayed with nicotine and soft soap against Mother Aphides; 800 gallons of wash used, or average of 3.8 per tree. This gives a much higher average cost per tree—namely, 6d.—but it is stated that the operators were a picked body of experienced sprayers, and that the work was done "carefully, evenly, and therefore slowly," also that this more expensive wash, as applied, contained a considerably higher percentage of nicotine than is generally recommended, or actually used, by the majority of commercial growers. The higher cost is partly saved if this increased strength of the nicotine kills the young caterpillars, and so avoids an arsenate spraying where there is not an epidemic of caterpillar.

It is a very interesting subject, and much more could be written, but I hope to return to it again and to give cost of different experiments, including use of various other plants, such as knapsack sprayers, and dealing with small orchards.

BOARD OF AGRICULTURE FOR SCOTLAND EGG-LAYING TEST, 1924-25.

REPORT FOR THE SIXTH PERIOD (4th to 31st March, 1925).

In marked contrast to the three previous periods, throughout the sixth monthly period of the Test agreeable weather conditions prevailed, with the exception of a few days of snow. The birds continue to enjoy excellent health. Two pullets and two ducks moulted, and only three pullets were removed to broody coops during the four weeks. The total number of pullet eggs laid during the period was 7,531, an average per bird of 19.16, as compared with 5,505, and an average of 13.97 last month, the average per bird since the beginning of the Test being 85.87. While there were no sensational scores, the general level of production was very satisfactory. The highest individual records for the month are 28 eggs laid by Mr. Scott Miller's **Light Sussex** pullet, No. 547 (pen 92), which has now a sequence of 66 eggs to its credit, and also 28 eggs laid by Mr. Burnett's White Wyandotte pullet, No .326 (pen 55). The next is 27 eggs laid by pullet No. 279 (pen 47), White Leghorn, belonging to Messrs. J. & W. Purdie. Mr. J. Prentice's pen of White Leghorns (winners of the Scientific Poultry Breeders' Association Cup—pen 46) still holds first place in the Test with a score value of 633.

There has been an appreciable increase in the number of eggs laid in the Duck Section, the total for the four weeks being 2,344, an average of 22.11 per bird, as compared with 1,420 and an average of 13.9 last month. The leading pen in this section is still No. 11 (White Runner), belonging to Mr. H. S. Godsmark, with a score value of 608.

Twenty-one ducks laid 28 eggs during the period.

Egg production of leading pens at end of Sixth Period—31st March, 1925. Figures are eggs and points respectively:—

Section 1.—White Leghorns.—J. Prentice, Uddingston, 638, 633; J. W. Dobbie, Rothesay, 636, 586; J. & W. Purdie, Lanark, 629, 566.

Section 2.—White Wyandottes.—R. A. Oliver, Fife, 598, 595; W. Bradbury, Bury, 638, 515.

Section 3.—Rhode Island Reds.—Mrs. Logan, West Kilbride, 614, 612; H. P. Roche, Stevenston, 591, 589.

Section 4.—Non-Sisters other than White Leghorns.—A. Watson, West Linton, 503, 502; R. Scott Miller, Uddingston, 499, 499.

Section 5.—Sitters other than in 2 and 3.—J. Adams, Lanarkshire 603, 603; O .C. Brown, Scunthorpe, Lincs., 510, 510.

Section 6.—Ducks.—H. S. Godsmark, Ashford, Kent, 653, 608; R. A. & A. M. Johnson, Stroud, 432, 431.

GLOUCESTERSHIRE LAYING TEST.

For Sixth Month to End of March.

Appended is the report on the Gloucestershire Laying Test (under the supervision of Mr. L. G. Price, County Instructor in Poultry Keeping), for the sixth month ended March 27th.

During the past month 6,390 eggs have been collected against 5,336 the previous month, giving a total of 26,847 for the six months, and an average of 84.1 in respect of the 319 pullets entered. The weather has been much more favourable for poultry, but the grass in the runs has not made any appreciable growth as yet in consequence of the continuation of cold weather. For some curious reason this is most noticeable in the pens where the highest records are being made. The health of the birds is exceptionally good. The Hon. Secretary will be pleased to forward on application particulars of the Test to anyone interested.

Section A. (1). White Wyandotte (Professional). Five birds birds constitute a pen).—P. M. Hinton, 2325 pts.; H. Bennett, 2142; H. Ludlow Hewitt, 2086; H. W. Fowles, 1942; H. T. Godber, 1927; F. W. Clifford, 1883.

Section A. (2). A.O.V. Heavy Breed. (Professional).—W. R. Partridge (R.I.R.), 2431; G. H. H. Simmons (L.S.), 2342; Miss M. Lawrence (R.I.R.), 2207; J. G. Herbert (R.I.R.), 2183; M. C. Beale (R.I.R.), 2148; Coaley P.F., Ltd. (R.I.R.), 1864.

Section A. (3). A.V. Light Breed (Professional).—Miss N. Townsend, 2311; Miss H. Baylis, 2252; F. A. Welch, 2132; Sherborne Park P.F., 2087; Cotswold Ped. Farm, 2020; G. H. H. Simmons, 1988.

Section B. (1). A.V. Heavy Breed. (Confined to owners of not more than 50 laying head).—Maisemore School (W.W.), 2484; A. W. Moses (L.S.), 2347; Miss M. Brown (W.W.), 2022; L. Grist (W.W.), 1792; R. T. Miles (B'Veld), 909.

Section B. (2). A.V. Light Breed. (Confined to owners of not more than 50 laying head).—C. E. Skirten, 2060; L. Grist, 1782; Miss M. Brown, 1583; J. D. Crewdson, 1533. All White Leghorns.

Pen Duck Section. (Four ducks constitute a pen).—G. H. H. Simmons (K.-C.), 383; S. J. Phillips (K.-C.), 309; G. B. Young (K.-C.), 286; Miss N. Townsend (K.-C.), 268; Major J. G. Dugdale (K.-C.), 265; Miss M. Lawrence (K.-C.), 252.

SINGLE PEN SECTION.

Section 1. White Leghorns.—L. Grist (6), 555; Miss K. Feaviour, 529; Miss N. Townsend (5), 521; G. H. H. Simmons, 484; L. Grist (13), 479; D. Japp, 472.

Section 2. White Wyandotte.—W. R. Partridge (38), 569; H. W. Fowles, 568; W. R. Partridge (34), 560; Lord Sherborne (37), 559; Lord Sherborne (39), 555; G. H. Simmons (31), 552.

Section 3. Rhode Island Red.—Miss M. Lawrence (59), 522; G. B. Metcalfe, 513; Miss M. Lawrence (42), 385; W. R. Partridge, 357; S. Barnes, junr. (48), 342; A. Daunton, 262.

Section 4. A.O.V. Light Breed.—Churchdown P.F. (Ancona), 518; H. W. Stephens (B.L.), 280; Miss M. Johnson (W. La B.), 278; G. B. Young (B.L.), 275; Churchdown P.F. (B.L.), 242; Miss K. Feaviour (B.L.), 183.

Section 5. A.O.V. Heavy Breed.—G. H. H. Simmons (Buff R.), 560; Miss M. Lawrence (Buff R.), 545;; Mrs. E. Weinholt (Aus. Orp.), 503; Miss M. Johnson (L.S.), 444; Lady Bledisloe (Aus. Orp.), 444.

Section 6. Ducks.—Mrs. H. L. Hanks (K.-C.), 164; H. W. Fowles (K.-C.), 138; F. L. Walters (7) (W.R.), 110; Miss N Townsend (12) (K.-C.), 109; Mrs. W. Pearce Ellis (K.-C.), 107; W. R. Partridge (14) (W.R.), 101.

(Signed) R. A. and A. M. JOHNSON.

The Cotswold Poultry Farm, Chalford.

H. S. WRIGHT, Hon. Sec.

Shire Hall, Gloucester.

THE CHESHIRE COUNTY COUNCIL EGG-LAYING COMPETITION.

SINGLE BIRD TEST.

Report of Results for Sixth Month—March 4th to 31st, 1925.

The flock average for the month is 18.6 eggs per bird, against 16.6 last month. The average for the Light Breeds is 21.36, and for the Heavy Breeds 16.4.

Fourteen birds have been broody.

In the Light Breed Section the leading bird, a White Leghorn (J. Mason) has a record of 124 eggs for the six months, of which 100 are special grade.

The Light Sussex (Liverpool Sanatorium), which still leads the Heavy Breeds, has laid 141 eggs for the six months. Her eggs are not so uniform, her score being 34 points behind the Leghorn.

All birds are in good feather and condition, and we are pleased to report that we have reached the half-way stage without any losses.

SUMMARY OF LEADING PENS.

Figures are Eggs and Points respectively.

Light Breeds.—J. Mason (W.L.), 25, 1159; W. J. Fletcher (W.L.), 22, 1068; E. Harrison (W.L.), 23, 993; Campbell Sheen (W.L.), 25, 952; W. J. Fletcher (W.L.), 21, 922; E. Harrison (W.L.), 22, 873.

Heavy Breeds.—Liverpool Sanatorium (L.S.), 25, 1125; Mrs. Garnett (B.R.), 21, 1119; Tansey Bros. (R.I.R.), 17, 1012; W. T. Griffiths (W.W.), 21, 1006; E. Paterson (B. Orp.), 22, 992; E. Carter (R.I.R.), 22, 963.

HARPER-ADAMS' AGRICULTURAL COLLEGE, NEWP
SALOP—POULTRY LAYING TRIALS, 1924/1925.

REPORT FOR THE SIXTH PERIOD.

The sixth period of the Trials, which terminated o
April, generally sees most variable weather conditions, an
year is no exception. The exposed thermometer has r
98 degs., and has also recorded a minimum temperature of 2
(or 12 degs. of frost). Rain was recorded on 16 of the 28
without, however, any heavy downfall, and has been co
acted by drying, but cold winds. The egg production ha
tinued to improve, the individual average being a fractio
20 eggs per bird compared with 18.8 in the previous peri
the Single Bird Test the figure is even better, the general a
in the four sections of over 21 eggs having been reached.

The broody coops have been frequently occupied amon
heavy breeds, but the general health of the flock con
satisfactory.

The Wyandotte Pen 79 (Purser's Pedigree Poultry Farm
tinues to lead the Small Flock Trials, and during this
has produced 141 eggs, 139 of these being first grade.

There is one change only in the first positions, th
operative Wholesale Society's pen of Anconas dropping to
place in their section. In this instance the loss of posit
due to the death of one of the pen, the reserve bird bring
an inferior record in substitution of the bird lost. S
circumstances, among the lesser leading positions, have rel
Mrs. Jellis's pen of Rhode Islands from 2nd to 8th positi

SUMMARY OF THE LEADING PENS—CHAMPIONSHIP T

Section 1.—Light Breeds.—A. White (B.L.), Malpas, Ch
1071 eggs; Frank Snowden (W.L.), Keighley, Yorks., 1003;
N. H. Bell (W.L.), Ightham, Kent, 1083; H. Sutton & Sons
Preston, 1030; Warwick Rogers (W.L.), Market Drayton,

Section 2.—Heavy Breeds.—W. Lister (L.S.), Northiam, S
1177 eggs; E. Watson (W.W.), Colne, Lancs., 1137; Miss M.
(W.W.), Blackburn, 1266; G. B. Metcalfe (W.W.), Lechlade,
1125; F. H. Collins (W.W.), Bewdley, Worcs., 1069.

SMALL FLOCK TRIALS.

Section 1.—White Leghorns.—W. McMahon, Newton M
Renf., 746 eggs; J. & W. Purdie, Lanark, 708; F. A.
Cheltenham, 681; H. Smith, Sheffield, 699; G. Keith Sim
Honiton, Devon, 631.

Section 2.—White Wyandottes.—D. W. Gunston, Bra
Hants, 806 eggs; Allen Bros., Harrogate, 713; Frank Sn
Keighley, Yorks, 693; Mrs. Alec Wilson, Breconshire, 661;
Harrisson, Daventry, 666.

Section 3.—Rhode Island Reds.—F. and A. H. Saunders, R
711 eggs; R. Green, Preston, Lancs., 659; Dashwood Farms,
Deddington, Oxon, 633; E. Leslie Pattison, Longton, Staff
F. J. Marston, Biddenden, Kent, 618.

Section 4.—Sussex.—F. Sandford, Shrewsbury, 636 egg
Bradbury, Bury, Lancs., 654; A. Hughes, Malpas, Cheshir
Capt. A. A. Plimpton, Beverley, E. Yorks., 654; A. Rob
Bawtry, Yorks, 651.

Section 5.—Black Leghorns.—W. A. Lansley, Whitc
Salop, 613 eggs; Lady Anderson, Sharnbrook, Beds., 602;
Beattie, Rothersthorpe, Northants, 579; C. L. & J. A. Th
Holywell, 596; J. H. Hodkinson, St. Ives, Hunts, 540.

Section 6.—Any Other Light Breed.—Storer Bros. (An.),
bury, Manchester, 585 eggs; H. Lynden Lemon (La Br.), D
577; The Co-oper. W.S. (An.), Whalley, Lancs.; 567; Stanley
Porter (An.), Ely, Cambs., 576; W. Hamnett (An.), Blackpo

Section 7.—Any Other Heavy Breed.—Miss P. Mills
Bishop's Castle, Shropshire, 709 eggs; F. R. Welch (Rks.).
ley, Worcs., 666; O. C. Brown (Rks.), Scunthorpe, Lincs., 661,
M. Fowler (B. Orp.), Blackburn, 633; P. E. White (Rks.),
Drayton, 605.

SINGLE BIRD TRIALS.

Section 1.—White Leghorns.—W. Hamnett, Blackpool, 13
W. M. Golden, Rugby, 133; D. Japp, Bake, St. Germans, 129;
Robinson, Spilsby, Lincs., 124; J. Potter, Wigan, 127.

Section 2.—White Wyandottes.—S. Street-Porter, Ely, C
138 eggs; Mrs. Alec Wilson, Garth, Breconshire, 135; S.
Greenall, Grantham, 127; A. Hughes, Malpas, Cheshire, 1
Watson, Colne, Lancs., 120.

Section 3.—Any Other Light Breed.—S. Street-Porter
Ely, Cambs., 115 eggs; A. White (B.L.), Malpas, Cheshir
W. Hamnett (An.), Blackpool, 116; R. A. & A. M. Johnson
Chalford, Glos., 109; Chivers & Sons, Ltd. (B.L.), Histon,
ridge, 95.

Section 4.—Any Other Heavy Breed.—O. C. Brown (B
Scunthorpe, Lincs., 127 eggs; T. Barron (R.I.R.), Preston
W. M. Golden (L.S.), Leire, Rugby, 120; E. Leslie Pattison (R
Longton, Staffs, 121; A. White (L.S.), Malpas, Cheshire,

Menadews, St. Clements, Tru

Dear Sir,—" Eggs " is packed full of information from
to cover, and contains more practical information than a
contemporary journals.

Thanking you, yours faithfully,

(Signed) L. CHO

ondon Market Advice Table.

MAY, 1925.

By **A. V. CLARKSON.**

is month will see the bulk of poultry farmers, and small, marketing their surplus cockerels.

ere are so many classes and kinds of cockerels so many different qualities at that) that it is r difficult to give a sender comprehensive advice nd the fact that it will be to his benefit to write salesman first; and tell him exactly the number, and quality of his birds and enquire the of the market for his particular produce. This prevent the producer sending up a consignment big expectations, and receiving a disappointing n. It will also enable him to judge whether it oe wiser to market his produce locally, or send it e London Market.

a matter of fact there must be in the country a phenomenal number of Leghorn Cockerels of size.

eing that the Poussin trade is rapidly declining, to the large quantities of 1½lbs. chicken being eted, it will be unwise to send this class of rel up unless scaling 1½lbs. or over, because the er sizes will hardly pay for carriage, etc.

ring Chicken scaling 1½lbs. and over when killed clean plucked will comprise the bulk of the nd this month, so that if a producer is sending irds alive for the salesman to kill and pluck, he d send nothing scaling less than 2lbs. alive.

icken which are white legged and white fleshed ealise on an average threepence per pound more the yellow varieties.

is may seem strange to one who is unaware of the on market, but it goes to prove that poultry is to a great extent on appearance. The fact of it sold on appearance is the reason that causes g cockerels, which have been in the breeding pen, young pullets which have commenced to lay, to e a bad price, as the appearance of these two s of birds is quite changed as a result of their ience, and the skin seems to have a different re, despite the fact of their tender age.

ENS will continue in steady demand, with a pos- slight drop in price. Those scaling 4½lbs. or over e a better price than the light breeds, the average t of which is generally below 4lbs. Hens should nt alive.

E COCKS from last year's breeding pens must nt alive, as they are very difficult to dispose of and plucked.

CKLING. The only duckling in demand on the on Market is for a white bird scaling 4lbs., and should always be sent killed and clean plucked.

EGGS. New-Laid Eggs appear to be getting scarcer, and the price seems firmer as well as the demand.

The writer has followed with interest the various articles and letters in the Poultry Press regarding the preservation of eggs, but having no experience in the marketing of preserved eggs, is unable to tender advice on this topic beyond the fact that it should be more profitable to market the eggs, and then turn his money over again and again, rather than lay up his capital for a prospective profit.

Of course this argument does not apply to the man with plenty of spare capital, and an assured demand for his preserved eggs.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

THE KEIGHLEY AND DISTRICT BRANCH.

SECOND ANNUAL OPEN UTILITY POULTRY SHOW.

We are informed by the Secretary of the above Society that the committee have decided to hold the Second Annual Open Utility Poultry Show on Saturday, 28th November.

The Secretary is Mrs. A. Wilson, Minorca Farm, Denholme, Bradford.

AIREDALE DOGS.

To the Editor of "Eggs."

Dear Mr. Newman,—May I, through the columns of "Eggs," inform those readers who wired and sent letters accepting offer of Airedale Dog (*re* current issue of "Eggs") that same has been disposed of to an earlier applicant.

It is quite impossible for me to answer all wires and letters received.

Once again it proves what a splendid Advert. "Eggs" can give one.

Yours faithfully,

EDGAR F. ORFORD (Capt.)

Gwent House, Silsoe, Ampthill, Beds.

What our Readers think of "Eggs."

Ash View, Heaton Grove, Bradford.

Dear Sir,—I might say that I have found "Eggs" to be the most helpful paper I have ever seen, and only wish I had taken it sooner, as I should have started on quite different lines if I had done so.

Yours faithfully,

(Signed) G. H. GRIFFITHS.

Chesterton Hall, Cambridge.
24th February, 1925.

Dear Sir,—Thank you so very much for your most kind letter of advice. I shall at once act on it. I never expected a letter back, but thought in the far future I might see a reply in "Eggs." It is wonderful to feel that in a real emergency one could get such help.

Gratefully yours,
(Signed) (Mrs.) MABEL PIERCE.

Windsor, Kelly Bray, Callington, Cornwall.
1st January, 1925.

Dear Sir,—"Eggs" has been a real help to me. It is the best Poultry paper I have ever read, especially for the person which is trying to earn a living by poultry.

Yours truly,
(Signed) JAS. WILLIAMS.

9, Rockvad Terrace, Dumbarton.

Dear Sirs,—Please find enclosed P.O. for 1s. 3d., being price of the book "One-Man Poultry Farming." I must mention, in writing, my appreciation of your paper, "Eggs." I think it has no equal in poultry journalism. Hoping you can supply book, and wishing you every success.

I am, Sir, yours truly,
(Signed) H. P. REYNOLDS.

Saltburn-by-Sea, Yorks.
11th November, 1924.

"Dear Sir,—I appreciate 'Eggs' tremendously—there is something good on every page, and it is really the only Poultry Paper worth reading. I have found the other papers a sheer waste of time."

Yours faithfully,
(Signed) (Miss) E. ARMSTRONG.

The Willows, Haydock.

Dear Sir,—I take "Eggs" weekly from my local newsagent, and out of the six papers I take it is the only one I can take and read from beginning to end.

Yours sincerely,
(Signed) A. PIMBLETT.

East View, Irchester, Northants.

Dear Sir,—I wish to take this opportunity to express my very great appreciation of your paper "Eggs," which has been and is a very great help to me. I often say to my friends, "When in doubt on poultry matters turn to 'Eggs.'"

Yours faithfully,
(Signed) HUBERT J. FROST.

Cherry Orchard Cottage, Bromley, Kent.

Dear Sir,—I must, in conclusion, express my deep gratitude to you for the sound advice you give in "Eggs." It has been of the greatest use to me, and my chicks and adult stock are all raised and fed on your formulas, to my considerable profit and the birds' health and stamina.

Yours very truly,
(Signed) HERBERT BINNEY.

Dear Sir,—I have only been a member of the S.P.B.A. since January, but I have gained more knowledge from "Eggs" and the Year Book in that time than I have ever got from other journals in years.

Yours faithfully,
(Signed) H. BRAMLEY.

Cumrew, Heads Hook, Carlisle.

Dear Sir,—In conclusion may I take this opportunity of expressing my appreciation of "Eggs" with hearty congratulations to the Editor.

Yours faithfully,
(Signed) J. T. POYNTER

Oldfield, Eversley Park Road, Winchmore

Dear Sir,—I may say I have only just discovered that
is just the book I have been looking for.

Yours truly,
(Signed) J. DAFFA

Crafnant, Chester Road, Neston, Chesh

Dear Sir,—As a beginner, I have only just heard of "
and take this opportunity of thanking you for the valuable
mation contained therein.

Yours truly,
(Signed) E. COPELA

Frewins Close, South Stoke, near Readi

Dear Sir,—Your paper, "Eggs," is greatly appreciated,
shall recommend it whenever possible.

Yours faithfully
(Signed) (Mrs.) J. V. KI

Long Whatton, near Loughboro

Dear Sir,—At the same time I would like to state my a
ciation of "Eggs." In my opinion it is an infinitely
paper than any of the other poultry publication.

Yours faithfully,
(Signed) C. H. KEITH JOPP (Maj

25, Woodland Road, Barry Dock, Gl

Dear Sir,—I am only a backyarder, yet I may say I
learnt already quite a lot from its columns, and am bri
your paper before my fellow-members of the Barry Fur
Feather Society at our next meeting. With anticipatory tha

Yours faithfully,
(Signed) F. CURI

Thaba 'Nohu, Naze Park, Walton-on-Naze, Es

Dear Sir,—I have recently been recommended your p
"Eggs,' by a poultry farmer, and I must honestly say
there is no other poultry paper which is as good in
respect, and which gives such sound advice.

Yours faithfully,
(Signed) JOHN HERRINGTO

Boundary Poultry Farm, Intack, Blackbu

Dear Sir,—I have been a reader of your valuable jo
"Eggs," for a few months now, and I think it is the
Poultry Paper published.

Yours truly,
(Signed) J. BIRC

80, Cobden Street, Walsall, Sta

Dear Sir,—I would like to add my personal thanks to
good self for the instructive articles you write and publish
time to time in "Eggs," which have made the keeping of po
much more enjoyable and also profitable, especially for the l
yarder and small man generally.

Again thanking you for past help, and hoping you will be
to keep on the good work.

Respectfully yours,
(Signed) E. O. MORR

Arcadia, Gaboomon's Lane, Watfo

Dear Sir,—At the same time I desire to take this opport
of expressing my great appreciation of "Eggs," and the
useful articles, formulae, etc., which appear in its pages
week to week. I am sure, as a poultry paper, it stands
above anything that has ever come to my notice, and i
always a matter of astonishment and regret to me that
person interested in poultry-keeping is not a regular reade
think this may be largely due to the fact that there are
people who do not know that your excellent paper exists, a
you care to send me down a parcel of old numbers, I shal
pleased to distribute these in the neighbourhood, and do wh
can to interest others, and so increase the circulation of
I consider to be the best periodical published on fowls
kindred matters.

Wishing you increased prosperity for the Association
"Eggs."

Yours faithfully,
(Signed) H. W. SMALLMA

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, 1st MAY, 1925.

GRAIN AND FEEDING STUFFS.—Moderate supplies of British neat are in fair demand at higher prices, the average quota- on now being 12s. 8d. per cwt. as compared with 12s. 5d. a week o. The market for imported wheat is still unsettled, and erage quotations over the week are again lower at Bristol id Hull, but at London prices generally are slightly firmer. iglish feeding barley is rather dearer, and imported descrip- ons, with an improved trade, also realise more money. Home- own oats are in limited supply and sell at higher prices, and reign sorts, which are scarce, are also dearer. Maize is in fair quest and has again advanced, the average quotation for gentine being 10s. 3d. per cwt., as against 9s. 10d. last week.

Coarse middlings are dearer at most markets, and at Hull id Bristol prices record increases of 5s. and 7s. 6d. per ton spectively, while other offals fully maintain recent quotations. arley and maize meals have both advanced, and at Bristol aize germ meal and locust bean meal also sell at higher tes. Oil cakes are in better request, and linseed and cotton- ed cakes realise more money, the increases at London being 6d. to 5s. per ton.

MILLERS' OFFALS.—Bran (British): Bristol, £8 17s; Hull, 12s; Liverpool, £8 5s; London, £7 10s. Broad Bran: Bristol, 0 2s; Hull, £9 2s; London, £8 17s. Middlings—Fine (Imported): ndon, £9 7s; Coarse (British): Bristol, £8 17s; Hull, £8 10s; verpool, £8 5s; London, £8 7s. Pollards (Imported): Bristol, 7s; Hull, £7 5s; London, £7 10s. Rice Bran: Bristol, £7; Liver- ol, £7. **MEAL.**—Barley Meal: Bristol, £11 10s; Hull, £11 8s; ndon, £12. Maize Meal: Bristol, £12; Hull, £11 7s; Liverpool, 0 15s; London, £10 15s. Maize Meal (S. African): Bristol, £10 ; Hull, £9 10s; Liverpool, £9 12s. Maize Germ Meal: Bristol, 1 5s; Hull, £10 5s; London, £9 7s. Maize Gluten Feed: London, 0 5s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 10s; Liver- ol, £9 10s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, 1 8s; London, £13. Fish Meal: Bristol, £21; Hull, £20; Liver- ol, £18; London, £20 10s.

EGGS AND DEAD POULTRY.

English eggs sell fairly readily, and prices have advanced ghtly. Plentiful supplies of imported eggs are offered, and ese also show a firmer tendency. Quotations for dead poultry e practically unaltered, with supplies equal to the rather w inquiry.

Week-end Prices—Eggs (per 120): British, 13s. 6d, 12s 6d; ish, 13s 0d, 12s 6d; Danish, 14s 9d, 14s 0d; Dutch, 14s 3d, 13s 9d; yrian, 12s 6d, 12s 0d; Belgian, 13s 9d, 13s 0d; Italian, 13s 6d, 0d; Egyptian, 9s 9d, 9s 3d; Polish, 11s 9d, 11s 3d; Russian, 0d, 11s 6d; Lithuanian, 12s 0d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 3d, 1s 9d; Irish, 10d, 1s 3d; Others, 1s 11d, 1s 5d. Ducks, 2s 2d, 1s 4d. Geese, 3d, 1s 0d. Turkeys, 1s 6d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 1s 4d; Second, 1s 3d. Birmingham: rst, 1s 4½d; Second, 1s 3½d. Bridgwater: First, 1s 4d; Second, 3d. Chelmsford: First, 1s 4½d; Second, 1s 3d. Doncaster: First, 4d. Dorchester: First, 1s 3½d; Second, 1s 3d. Exeter: First, 2d. Hereford: First, 1s 1d. King's Lynn: First, 1s 2d; Second, 1d. Llandilo: First, 1s 1d. Mold: First, 1s 0d; Second, 11d. wport (Mon.): First, 1s 4d; Second, 1s 3d. Norwich: First, 4d. Oswestry: First, 1s 3d. Penzance: First, 1s 1d; Second, 0d. St. Ives (Hunts): First, 1s 4½d; Second, 1s 3d. Salisbury: rst, 1s 2d; Second, 1s 1d. Skipton: First, 1s 2d. Truro: First, 1d. *Carlisle: First, 1s 4d. *Derby: First, 1s 4d. *Ipswich: rst, 1s 4d; Second, 1s 3d. *Lincoln: First, 1s 3d. *Shrewsbury: rst, 1s 3d; Second, 1s 2d. *York: First, 1s 4d; Second, 1s 3d.

FOWLS.

Per lb.—Birmingham: First, 1s 8d; Second, 10d. Hereford: st. 1s 8d. Llandilo: First, 2s 4d; Second, 2s 0d. Newport on.: First, 1s 9d; Second, 1s 4d. Truro: First, 1s 5d. *Derby: rst, †5s 9d; Second, †4s 0d. *Ipswich: First, 1s 9d. *Lincoln: rst, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 4d. *York: First, †6s 0d; Second, †4s 6d.

DUCKS.

Per lb.—Llandilo: First, 2s 4d; Second, 2s 0d.

* At these markets the prices quoted are for sales by pro- cers direct to consumers. At other markets prices are those id to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, May 6th, 1925.

CONTENTS.

EDITORIAL ... 287
S.P.B.A. ... 290 and 302
ANSWERS TO QUERIES ... 292 and 301
POULTRY FOODS ... 294
LANCS. FEDERATION OF U.P.S. ... 296
BEES ... 296
ANGORA RABBIT WOOL FARMING ... 297
HANTS COUNTY LAYING TRIALS ... 297
GLAMORGAN COUNTY LAYING TRIALS ... 297
NOTES ON UTILITY DUCKS ... 298
MIRFIELD & DISTRICT P.K.A. LAYING TRIALS ... 298
THE INTENSIVE SYSTEM ... 299
LANCS. U.P.S. EGG-LAYING TEST ... 300
POST-MORTEMS ... 301
CORRESPONDENCE ... 302
PRESTON & DISTRICT U.P.S. LAYING COMPETITION ... 302
SOME FRUIT GROWING NOTES ... 303
BOARD OF AGRIC. FOR SCOTLAND EGG-LAYING TEST ... 303
GLOUCESTERSHIRE LAYING TEST ... 304
CHESHIRE COUNTY EGG-LAYING COMPETITION ... 304
HARPER-ADAMS' AGRIC. COLLEGE LAYING TRIALS ... 304
LONDON MARKET ADVICE TABLE ... 305
MARKET REPORT ... 307

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to the poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue. It is hardly necessary to add that the earlier in the week we receive copy the better it is for every-one concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS,	**per line,**	**extra**	**9d.**
DAY-OLD CHICKS,	**„**	**„**	**1s.**
DAY-OLD CHICKS	**„**	**„**	**1/6**

The number of letters, punctuations and spaces between words should be totalled, when the following table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount, will not be inserted.

Advertisements must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d.. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office

FIRST POST FRIDAYS

for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY, and TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. **BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS,** for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent, and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

EGGS.

FOR SALE.

Pure Aylesbury Buff Orpington, White Runner Ducks Eggs; 4s. dozen. — Walker, Coteghyll Cottage, Langwathby, Carlisle.

Handsome Blue Laced Andalusians, Black Minorcas and Brown Leghorns; 4s. 6d. sitting, replaced. Inspection invited.—Speed, Fiskerton, Lincoln.

Now's the time to get eggs

The hens' natural laying season is here, and it's now up to you whether your profits are to be big or small.

Feed your fowls on Ful-O-Pep Laying Mash and you will get far bigger profits than ever before, because Ful-O-Pep not only gets every possible egg, but it keeps fowls in superb condition so that they lay for a much longer period. On this depends the degree of your success.

It costs about 90 eggs to feed one hen a year. Every additional egg you get brings profit.

Adopt the Ful-O-Pep way to-day. Get those *extra* eggs while your hens are in the laying mood.

It pays to feed the finely ground, easily digested, and perfectly balanced Ful-O-Pep Laying Mash sold only in the blue-striped bags showing our Trademarks.

For complete information on this most vital subject, write for your free copy of the Ful O-Pep Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

FUL TRADE -O- MARK PEP

LAYING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE

The Ful-O-Pep Guide has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Ful-O-Pep Poultry Feeds are made nd guaranteed by Quaker Oats Ltd., 11, Finsbury Square, London. E.C 2.

EGGS.

FOR SALE.

Large Brown Eggs for hatching, ex tion and Utility Barneveldеrs; 6s. 6d., 6d., 20s. dozen; u.r.—Sydney Hiller. Stan Herts.

Barnevelder Eggs (Baroness Brie from 7s. 6d. dozen. White Wyand (Cam-Barron), from 6s.—Mrs. Staff, Manor House, Burston, Diss, Norfolk.

Eggs from my Utility Winners, Cr Palace, Olympia, Birmingham, York, Light Sussex (Cook's, St. Mary's C White Wyandottes (Frank Snowden), W Aylesbury (Abbott's), Buff Orping Khaki-Campbells (Long); all 6s. per d Carriage paid. Also Turkeys (Abbott's) Geese Eggs ready.—T. A. Spray, Ba Hall, Newark (M.W.W.C., M.P.C., S.P.B

Indian Game, Pure Eggs from pedi winners; fine, healthy stock; free ra Mrs. Holloway, Sneade, Churchstoke.

Sittings.—Indian Game, 6s.; Barred R sire direct Simon Hunter this year, 6s. unfertile replaced. — C. Hilton, Carle Rode, Attleborough.

THE BEST EXCHEQUERS Procura Chicks, from Miller's Best Exhibi direct; 15s. dozen; Miller's Extra Sp direct, 10s. dozen. Live delivery. Carr paid.—John Pighills, S.P.B.A., Crag Poultry Farm, Cononley, Keighley.

SITTINGS AT REDUCED PRICE
Snowden Leghorns; Phillips Suss Full particulars and illustrated catal free.—Barrowmore, 4, Gt. Barrow, Che

NATIONAL TEST.

Roland Garrett holds second place four winter months. Only 17 second-g eggs. Black Leghorn: Sittings, 7s. 6d. 12s. 6d. Repeat orders received year a year.—Lea Poultry Farm, Wheathampst Hertfordshire.

FINAL REDUCTION.

Pedigree Trap-nested Buff Orpington, W Wyandotte, White Leghorn, Fawn-W Runner Ducks.

EGGS 5/- DOZEN.

—Colonel Sandbach, Caerllo, Abergele, Wales.

DON'T READ THIS!

If you do, don't hesitate; act at o You will never regret it. Having met exceptional success, have completed my requirements for this season, and can supply a limited number of sittings at 6d. dozen, from pen White Leghorns Snowden's), records from 230 to 250; riage paid; boxes returnable. — Leslie Aves, Member of P.C. and S.P.B.A., Gr Shelford, Cambs.

ROWLAND COOKE, M.S.P.B.A N.U.P.S.

Offers White Leghorn Eggs from famous Pen 26, National Laying Test ners, 1923, and from life-recorded da sired by proved L2 cocks. Prices from per 100; trap-nested hens only. Catalo free. Also Black Leghorns, Rhode Isl Reds, Anconas. Approved Breeding Stat by Ministry of Agriculture. — Keldhol Poultry Farm, Kirby Moorside, York.

EGGS FOR HATCHING,

White Leghorn and White Wyandot Barron and Snowden's strain; unlimi range; 5s. 6d. for 15, carriage paid; with order. These birds are all bred fr the best stock obtainable. Satisfact guaranteed. Inspection invited any except Sundays. — Harry Fawcett, O Hall, Ireby, Kirkby Longsdale, Westmo land

RELIABLE EGGS, 70/- 360

R.I. Reds, Black and White Leghor W. 'Dottes. Trap-nested stock; 23s., 100. Runciman, Poultry Farm, Lapford.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, MAY 13th, 1925.

Editorial.

CO-OPERATIVE MARKETING.

We have received, from the Ministry of Agri- lture and Fisheries, the report of the Economics vision on "Co-Operative Marketing of Agri- ltural Produce in England and Wales." It is particular interest now that the National ultry Council is calling a Conference on the oblem of the better marketing of poultry produce. Mr. R. J. Thompson, Assistant Secretary to the vision responsible for the report, frankly states, his introductory remarks, that the whole ques- n bristles with difficulties. He describes the l difference between a co-operative society and joint stock company, which apparently is not vays appreciated. Of the former he says :—

> "It depends upon the support of its members. If it does not receive that support, and has to conduct its business on the same lines as a joint stock company, it has no essential advantage in competition with private traders or companies. It may retain some of the less important features of co-operation, but so far as its trading side is concerned, it has lost the special feature which has made co-operative trading a real force in many other countries.
>
> * * * *
>
> "Producers have joined these co-operative societies and have subscribed a certain amount of capital, but, broadly speaking, there has been little realisation of the necessity for supporting the societies they have formed.
>
> * * * *
>
> "If the producer were whole-heartedly and thoroughly convinced that co-operative societies offered the best means of getting the highest price for his produce, he would not refuse to support them to any degree that might be necessary. But in too many cases, experience has made him doubtful."

ur readers will agree that all this is perfectly e, and it does not augur well for the future co-operative trading in this country; all the ne, the conditions are widely different from se which obtain abroad. The necessity for ling markets for their produce has made co-operation essential to the Danes and others. There are certain districts here where co-operation would undoubtedly be advantageous, but there are many others where the producer would not find it in any way beneficial. Although the producer has been blamed for the failure of co-operation here, it is no secret that the societies have in some cases been competing the one with the other, and have often undersold each other, which certainly does not help the member.

A full survey is given of the operations of the Framlingham Society and the Anglesey Egg-Collecting Depot, Ltd. It is notable about the Framingham Society, which has now 5,585 members, that it is mentioned that, probably owing to its proximity to the London market, support from Essex is limited. The history of the Anglesey Society is interesting. In 1911 eggs were sold in Llangeni market at 24 to 30 a shilling, and the producers had frequently to take them home again. The quantity of eggs exported from the island was negligible; in 1924 the turnover was £14,318, the total number of eggs dealt with being a quarter of a million less than in the previous year. The explanation of this is of interest and illuminating. The number of bad eggs received by the society became so large in 1923 that there was danger of the depot closing down, **the loss from bad eggs being at the time over six hundred pounds annually.** To overcome this difficulty, every member was supplied with a rubber stamp so that bad eggs might be traced. Opposition to this arrangement on the part of both members and purchasers was experienced at the beginning, and still persists, but the practice is being continued. The quantity of eggs has decreased, but the quality has improved. A better indication of how little the true spirit of co-operation is understood it would be difficult to find.

With respect to testing and grading, women are employed for this purpose, and they are able to test 6,000 eggs a day each on an average. Eggs are graded into "Firsts," "Seconds" and "Thirds." "Firsts" are new laid, tested and graded eggs, averaging 16 lbs. to the long hundred; "seconds" are new laid, not graded, and weigh 14 lbs. to the long hundred; "thirds" are tested fresh eggs, not graded, and may include ducks' eggs. The average difference in selling price between these grades is 2s. 6d. per 120, between "first" and "seconds," and 6d. per 120 between "seconds" and "thirds."

Owing to the practice of paying members a flat rate for all eggs sent in, "seconds" and "thirds" are frequently sold below cost, the society depending for its profits upon the sale of "firsts." This cannot be regarded as very satisfactory. There is little encouragement to the individual producer to market his produce to the best advantage, which should be one of the most important objects of a co-operative society. It is noted, too, that when necessary eggs are cleaned. Why should a society of this kind accept eggs which it is necessary to clean?

Stamping of Eggs.—On more than one occasion it has been urged that English eggs should be stamped. The Framlingham Society attempted this, but exception was taken to this by traders, whose attitude eventually forced the society to abandon it. The society has now a total pickling capacity for 4,000,000 eggs.

It is perhaps in that part of the report which deals with the relations of societies with their members that we get the real cause of the failure of co-operation here.

(1) The proportion of poultry-keepers, who are members of the societies in the localities in which they operate, varies from as much as 50 to 75 per cent., in the case of one or two strong societies to very small percentages in others. Since so many societies trade with non-members, the proportion of poultry-keepers who participate in the activities of societies, may be larger than is shown by the actual membership.

(2) There appear to be no contracts, even of a nominal kind, members delivering to their societies at will. Further, it is a widespread custom to buy eggs from non-members and members on the same terms, a practice which can hardly advance the value of membership as such. Various forms of disloyalty are reported; as, members sending their best eggs to an auction and the small ones to the society—dumping them on the society when there is a glut and selling them elsewhere when they are dear.

(3) So far as is known, there are few, if any, cases of producers sending graded eggs for disposal, grading, when undertaken, being the accepted function of the societies themselves. Where grading is performed by the society, any resulting gain accrues of course to the society, and is represented in distributed profits.

These remarks imply—or perhaps it would be more correct to say suggest—the idea that very little effort has been made to encourage the producer to market his eggs in a better manner.

Comment is made on the absence of a guaranteed supply, and the tendency of members to restrict supplies at those times when their society would derive most benefit from them, and conversely to send them when the market is unfavourable. A valuable suggestion is made—that contracts with members should always be adopted, in order that societies should be able to hold their ground and
make headway. This would indirectly,
effectively, influence the quantity and quality
production.

It will be seen from these extracts from
report that the co-operative marketing of poul
and eggs in this country is in a wholly unsa
factory condition. There seems to be an ut
failure to understand the true spirit of co-operati
By many members the societies are looked upon
a dumping ground for surplus, and in some ca
inferior, or even bad eggs.

It may be said that it would be impossible
fix contracts with small poultry-keepers. Still,
co-operation is to be really effective, these c
tracts seem essential; and it would seem t
ultimately it will be necessary for legislation
prevent the sale of bad eggs. Again, it seem
bad principle to pay for eggs at a flat rate; grad
should be done by the producer, and what ga
accrue should be his, and not the society's.

The report reveals a state of affairs which
only makes one feel that it is necessary
encourage the better marketing of English eg
but enforce it. In a few short months, we
hope that the Bill which includes a clause for
Marking of Foreign Eggs will become law. If
is to be of real advantage to producers, it m
be recognised that we must beat the foreigner
quality. That it is useless for 90 per cent,
producers to work to this end, if 10 per cent.
so unscrupulous as to sell, as English new
eggs, anything they can collect; these 10 per ce
will damn the reputation of the English egg.

Co-operation has at least been successful in
Orkney and Shetland Islands. In the House
Commons, recently, Mr. T. Johnson stated th
the inhabitants had entirely collared the e
markets of Leith and Edinburgh from the Dan
He described conditions existing on the islands
North-East Scotland and those on the North-We
On the former is prosperity, on the latter st
vation; and he attributes the difference to the fa
that on the N.E. they have entirely abolished t
middle-man. He examined the books of o
farmer, and found he had made £176 from 2
hens. This was questioned by Mr. Macquist
but Mr. Johnston persisted in his statement, a
said that he examined the books of the
operative society and found several farmers dra
ing over £150 from about 200 hens. We mu
accept this, but one is inclined to think that t
statement that £176 was made from 200 hens w
made under a misapprehension.

The report issued by the Ministry is of gre
interest and value. It can be obtained from H.
Stationery Office, Adastral House, Kingswa
London. Price 1s. 8½d. post free.

Frewins Close, South Stoke, near Reading

Dear Sir,—Your paper, "Eggs," is greatly appreciated, and
shall recommend it whenever possible.

Yours faithfully,

(Signed) (Mrs.) J. V. KIRK

Modern Poultry Feeding

By TOM NEWMAN.

LEG-WEAKNESS AND BOWEL TROUBLE.

have received the following letter from Mr. Win- rpe Somerville :—

" Dear Mr. Newman,—The following account of an eriment may be of interest to some of your readers. s rather late in the season for its value to be tested any extent now, but I was unable to send it till I w the results to be an established fact beyond the lms of coincidence. Leg-weakness with chicks is, h me, a thing of the past—absolutely. I have never a case since ventilating my brooders on the uced air current principle. But there have been es of bowel trouble of sorts, the chief characteris- of which has been that of liquid excreta piling up a hard lump outside the vent, necessitating oval by the application of hot water.

very early hatch this year was the final of a series xperiments I have been conducting over two years obtain definite information in a certain direction, the results of which I propose to communicate in near future, and in this hatch I deliberately set incubator to give a temperature of 107 degrees r. *on top of the eggs*, over the whole 21 days. The lt was 21 chicks from 90 fertile eggs, the remainder *g dead-in-shell.*

he 21 survivors were the sorriest specimens it ld ever grieve your heart to see. Six died after 24 rs in the nursery. Of the remainder nine had their turned inwards, and the claws doubled under, ch caused them to wobble like sea gulls. In *every* the bowel trouble I have specified was particu y virulent, and it was to this I directed my ntion.

he chicks were removed from the nursery 60 hours r hatching, and offered their first food and drink. y went for both ravenously, requiring no coaxing tever. The feed consisted of a well-known chick uit meal moistened with warm skim milk, and drink skim milk.

fter 24 hours in brooder violent diarrhoea in the of a dark brown liquid appeared, and piled up ide the vent in a hard cake.

have had opportunities of observing the fact that e case of both wild and caged birds from infancy ards, the droppings invariably show indica- s of the presence of lime similar to that seen from adult hen in good condition. Briefly, then, I avoured to produce the same condition of excreta he newly-hatched chick and onwards.

mixed the milk with an equal quantity of *rated lime water* The trouble disappeared within hours, and never returned. But wait—there is in it than this. The chicks to which I am re- ng are ten weeks old; they are in perfect condi- ; perfectly feathered; *and every toe and leg ght and normal.*

All subsequent hatches have had lime water from 60 hours after birth, and I have never had a single case of bowel trouble or illness of any kind since.

The physical appearance of the chicks is peculiarly gratifying, inasmuch as they are so extremely lively, and may be best described as " live wire canaries." The White Leghorns are completely feathered in a month, including heads; the White Wyandottes nearly so.

If the practice of giving lime water is " ancient history," I make no apologies, since there must be some who are unaware of it; and it is to those I say it is a perfectly safe procedure, as the solubility of calcium hydrate being only 91 grains per gallon of cold water, you cannot overdo it.

To make the solution of lime water it is only necessary to cover the lime with about 20 times its volume of cold water for six hours; the solution may then be stirred, and when all sediment has settled it is ready for use.

. . . . .

Referring once more to the question of leg-weakness.

I am in entire agreement with you in your remarks about Mrs. Ellis's letter that leg-weakness is not a disease, either inherited or contracted. Why should it be a disease? And if so how does the first chick contract it? That it is a defect created by unsuitable conditions of living is more reasonable.

From the mass of correspondence received after the publication of my article on "Ventilation," I happen to be in a position to know that literally tens of thousands of chicks are lost from that cause, and in ninety per cent. of the cases which have come under my notice, hovers have been used in which there has been no adequate vent for foul air at the top, and heat is radiated over the back of the chicks.

Surely one should not regard it as indigenous to a particular locality. Before I reconstructed my brooders my losses from leg-weakness amounted to as much as 25 per cent.; now I never see a sign of it, and the reason for its absence I attribute to two conditions :—

(1) The air supply comes up from under the chicks' feet, and the foul air is carried up and out at the top.

(2) I have cut out all possibility of the radiation of dry heat on the chicks' spines.

But then I see the poultry expert of a popular daily paper still recommends using earth and chaff on the brooder floor, and I begin to wonder if a friendly angel hovers over my work, and allows me results which I ought not to get."

The extraordinary effect of lime water on chicks hatched under such abnormal conditions is puzzling in the extreme, and it would be wise not to attempt an explanation.

Undoubtedly *very great* benefit has been derived by the better ventilation of hovers, but that the bad ventilation is the sole cause of leg-weakness, I am unfortunately compelled to admit is not the case.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

M. E. E. (Slaggyford) writes to the effect that he bought 24 day-old White Leghorns, and on the fifth day they began to die off, closing their eyes, and, if given a drink, put their heads back and gasped. The excreta is white. The feeding is a well-known chick feed and meal, with broad bran and oats. I am afraid this is a matter in which I cannot help my correspondent. It is quite possible that the chicks are dying from B.W.D., although it may be due to a chill. In that case he could give 40 grains of citrate of iron and quinine to the gallon of drinking water, and allow the chicks nothing else to drink. I am afraid from my correspondent's description the trouble is B.W.D. At any rate it would be advisable to isolate the chicks. It is very difficult to help when the details are so scanty, and it would be much safer to send the chicks for post-mortem examination, as diagnosis by symptoms is rarely satisfactory.

D. W. (Canterbury) wishes to know if the feeding of her fowls in any way causes them to lay eggs with blood spots in them. In some cases there are large clots of blood in the eggs. She has had several complaints from people to whom she sells the eggs. No, there is no direct connection between blood spots in eggs and the feeding. It will possibly, however, be wise not to feed a great deal of maize when this trouble arises. Generally it is only a few individuals who lay these eggs. When a hen is laying heavily the ovary is plentifully supplied with blood to promote the rapid formation of yolks. When a yolk sac ruptures to release a yolk some blood may escape from a congested blood vessel in the sac. The blood passes into the oviduct with the yolk, where it becomes surrounded by albumen and incorporated in the egg. Sometimes the blood-spot is in the white or albumen. In that case it is due to a ruptured blood vessel in t oviduct. With regard to fattening the young cocker on dry mash, I would not advise such a proceedin They are far more readily fattened on wet mash, the actual foods used for fattening are more eas assimilated when cooked.

"Great Scot" (Wimborne) writes that he "between the devil and the deep sea" in rega to the hatching qualities of his incubator, and wants to know if I can give him any advice. I sends one dozen eggs and 6d. for the return of t box, which, "en passant," I may say cost 9 His first test of 100 eggs showed eight clears, a the second four, and only gave him 27 chicks o of the 100 eggs, which did not all come out un the 22nd day. The machine was run on maker instructions, the water in the tray from the firs On the second occasion the water tray was n filled until the last week, otherwise the machi was run as before, and only 12 good chicks fro his 100 eggs resulted. I have examined the doz eggs, and the details are interesting. There we two addled, three in which the germs had died a comparatively early stage, three in which t chick was shrivelled up and had died about t 15th day, and in the remainder deaths had tak place on the 18th day. Of the latter the chic completely filled the shell, and there was plenty moisture. Now, taking all these into consider tion, what are we to think? We have eight of t eggs which were unhatchable. Why the thr should have shrivelled up to this extent I am unab to say, unless they were stale eggs. Of the r maining four all died on the 18th day. All we full of moisture, and I am not inclined to blan the machine in any way. The only mistake whi I think had been made was, that the machine w run at a temperature of 103 to 104 with the bu of the thermometer on the eggs, all through t hatch. Apart from this, I think that the sto birds were at fault. Such a temperature wou not have accounted for the addled eggs, for tho with the shrunken contents, nor the dead germ It could not have been a question of oxygen or excess of carbon-dioxide. Of that we are assure It then remains that it is either due to the hig temperature and the stock birds, and, in n opinion, they both were at fault.

N. W. (Banbury) is using the following formul Toppings 40 per cent., bran 30, S.G.O., 15, fi meal 10, and clover 5. The birds have been la ing fairly well on this, but the eggs are rath small, several being under 2 ozs. I think it wou be advisable to reduce the bran to 20 per cen the S.G.O. to 5, and add 10 per cent. maize mea The mash has not enough body at present, a with this change there will probably be an improv ment in size of eggs. If they continue on t present mash there is likely to be a bad drop the yield later on.

Worried (Brentford) writes concerning serious ses with three weeks' old chicks. He describes mptoms which indicate that the trouble is Cocci- sis, but I cannot be definite on this point. It uld have been so much wiser to have sent speci- ns for post-mortem examination. The best ng he can do is to kill off all sickly chicks at ce and burn the bodies, remove the others to sh ground, and continue to do this as long as cks show signs of sickness. Don't attempt to e sick chicks, there is no cure for this trouble, hough a few may survive an attack; still they a menace to the rest, and are unthrifty and profitable. Give 15 grains of powdered catechu the gallon of drinking water, and continue this atment until the disease is stamped out. See t the drinking vessels and feeding troughs are such a position that they cannot be fouled, as egg of the parasite is voided in the droppings. samples of food sent, although not of high ulity, would in no way account for these losses.

). S. (E. Anglia) finds a serious drop in the egg ld from his flock of White Leghorns, and there also a falling off in the size of egg. The birds wet mash in the morning, 2 ozs. per bird ghed dry, consisting of bran one part, supers r, biscuit meal one, meat meal quarter part; night 2 ozs. of grain is given, consisting of two ts oats and one wheat. "D.S." is feeding much by rule of thumb, and I suspect that the p in the egg yield and loss of size is due to the ls not receiving sufficient food, in fact they e been laying heavily on a diet which is only a e better than a maintenance one. He will be to increase the mash to 2½ ozs. weighed dry, to replace the oats with kibbled maize.

rower (Notts) wants a mash for ten weeks' old s until the laying stage; it is not to be forcing. following will be suitable:—Bran 2 lbs., dlings 4 lbs., Sussex ground oats 1½ lbs., meat bone or fish meal ½ lb., maize meal ½ lb. The ple of malt culms sent have very little nutrient e owing to their having been stored for a con- rable period, and it would be inadvisable to them. In answer to his second question, e birds should be encouraged to perch at once. hes should be provided as so often described ese columns.

V. (Plymouth) wants to know something t fish meal. He has heard that it is manu- red from the intestines, and if this is the case as no desire to use it. Having been in a fish et, he believes this would be injurious to s. The best samples of fish meal, "D.V.," made from white fish only; the herring, owing xcess of oil, is unsatisfactory. The fish are d at sea, the entrails thrown into the sea. e ports the fish are filleted. The heads and s with a good deal of the attached fish re- d, and it is from this that the meal is made. An inferior quality is made from herrings, and a good deal of refuse from the markets is also used, this generally smells very strongly and is reddish-brown in colour. It contains an excess of oil, causes digestive trouble, and will make eggs taste fishy. The best test for an excess of oil is to place the meal on a sheet of note paper; if this becomes greasy the oil content is too high. A good analysis of white fish meal is: Protein 55-60 per cent., Lime Phosphates 18-25, Other Minerals, including salt, 3.5, Carbohydrates, including fibre, etc., 1.3. Neither the salt or oil content should exceed 4 per cent. in a good sample.

POST-MORTEMS.

D. The post-mortem on the ducklings showed that the cause was infectious cerebro-spinal meningitis. The causative agent is still unknown, and deaths occur so quickly that any form of treatment, even experimental, is futile. As a preventive measure, good reports have been received from the use of sodium hypo-sulphite—10 grains daily per head, dissolved in water and mixed with the mash, or in the drinking water. I have taken samples of the heart blood and brain for cultural purposes, with a view of trying to find out what germs, if any, are present, as the matter needs investigation.

A. N. A. The post-mortem examination of the cock showed no lesions of tuberculosis, but those of asthenia were very marked. This disease is caused by a member of the colon group of bacteria, and has been named the bacillus astheniae. The post-mortem lesions are extreme emaciation of the entire body, dryness of the muscles and organs, and reddening of the mucous membrane of the duodenum which is in a condition of mucous enteritis (mild). It is doubtful if the trouble is infectious, although several cases may occur at the same time, or following each other. It has not yet been possible to infect one bird from another experimentally. At the same time it would only be common caution to keep his immediate associates in quarantine for some time. The treatment recommended is a preliminary dose of purgative medicine—full dose of castor oil—to remove as many of the bacteria as possible, followed by tonics and internal antiseptics. Add one dram of sulphate of iron to each pound of mash, and dissolve 15 grains of sulpho-carbolate of zinc in every gallon of the drinking water.

S. On opening up the swellings on the legs of the cock, the tract of a puncture leading down to the tendons was clearly visible. On one side penetration of the tendon and injury to the bone had resulted, and septic infection had travelled up the leg by the tendon sheath as far as the spur. On the other side the conditions were not so bad, although there was a quantity of cheesey pus in close proximity to the bone. The internal organs showed no trace of disease. In the case of the other bird the swelling should be freely lanced, but without injury to the underlying bone or joint, etc., the pus removed, and the wound dressed with tincture of iodine.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

VIOLET RAYS.

I have received the following cutting from Mr. de Kusel:—

ELASTIC GLASS.

> "Two Austrian chemists have invented a substance for glass, which, because of its likeness to opal, they have called 'poll-opas.' The new substance, says the 'European Commercial,' can be worked on a turner's lathe at a much lower temperature than glass, and is one of the most elastic substances hitherto discovered. It has many properties which make it superior to ordinary glass. It is much softer, and does not keep out the violet rays of light, and so should be of the greatest value as a window glass for hospitals and hot-houses. It is easily dyed, and solutions of it can be applied to cloth that will give it a stiff and shiny surface, and will not wash out. It will serve as a binding material in connection with printer's dyes, and in the textile and paper industries, and will also be of great importance in colour photography. Poll-opas will probably be manufactured on a large scale in a few months."

What significance this may have for our industry we have yet to see; it may be very great; we are only just beginning to understand.

ALTITUDE AND INCUBATION.

In spite of the fact that one or two letters have been received suggesting that the period of incubation is prolonged at a high altitude, the evidence is that this is only a matter of coincidence, and we must, I think, look elsewhere for the reason. I have had experience of hatching at 750ft. above sea-level. Mr. Frank Snowden's farm is nearly 900ft. above, and he tells me that he has not found that hatching is in any way delayed. Now I have the following letter from Miss Edith Bennet, which I think is conclusive:—

> "Dear Mr. Newman,—My home is on Dartmoor, 1,300ft. above sea-level, and I have used a Glevum incubator there for two years. The eggs, Black Bresse, hatch out regularly on the night of the 20th and 21st day of incubation. I run the incubator in a room heated to 55-60 degrees, and keep it at 105 degrees first week, 104 second, and 103½ the third, turning five times daily by hand. So my experience runs contrary to that of Messrs. Thomson and others. I agree with you in thinking that it cannot be solely a question of altitude that affects the period of incubation.

Another member has also written to say that he is only 200ft. above sea-level, and his chicks do not hatch until the 22nd or 23rd day, but are strong healthy. In general we find that the texture thickness of the shell has more to do with the period the hatch than anything else, and it may be that is affected, in some localities by something which hens derive from the soil.

SALE AND TRANSIT OF DISEASED POULT

In our issue of April 22nd reference was made the sale and transit of diseased poultry, and a sugg tion which I made at the National Poultry Cou that it might possibly be made an offence to exp diseased birds for sale was referred to.

Mr. F. G. Payne has sent me the following cutt from the "Essex Weekly News":—

DISEASED FOWLS.

> "George Richens, poultry farmer, Nobl Green, Eastwood, was summoned for causing necessary suffering to seven fowls. Inspector F. J. Carter, R.S.P.C.A., said he saw the fo in pens at Wickford Market on March 23rd. T were all suffering from diphtheritic roup, were in a bad condition. Defendant told him was the first time he had had the disease am his poultry. Witness said it was a highly inf tious disease. Replying to the Bench, the spector said he would not care to eat fowls such a condition. They were not examined w taken into the market. Mr. R. A. Phil veterinary surgeon, said the fowls were doubtedly suffering pain.—The Chairman: W is the idea of putting them into the market Witness: To eat, I presume; but I do not c sider that they were fit for consumption. Def dant said he thought the condition was partly to the creosote put in the fowl-houses at his mises.—The Chairman said the Bench conside that the sending of these diseased fowls into market ought to be stopped. Defendant would fined £5 and expenses, £1 1s."

If our members who attend markets saw disea fowls exhibited for sale, and drew the attention of auctioneers to it, we might put an effective stop to sale of these birds at auction markets in time. any rate this is a step in the right direction.

STORING EGGS FOR INCUBATION.

I have received the following letter from Mr. Fish:—

> "Dear Sir,—Upon your opinion given 'Eggs' some months ago that it was not nec sary to turn eggs stored for hatching if cove with bran or wrapped in paper, I have given trial. I stored eggs each day for eight days, co pletely covering them with bran, and then cov ing with a newspaper on the top. The resu were very good, and were as follows:—

	Eggs put in. incubator.	Chic hatche
(1) Heavy and Light Breeds..	140	96
(2) Ditto	140	115
(3) Light Breeds	132	124

No. 1 would have been a splendid hatch had not one pen given 24 duds out of 28 eggs—due, I think, to a faulty cockerel, which was only mated to make up the early hatches.

This, in my opinion, fully justifies that it is not necessary to turn eggs stored for hatching.

I have never seen leg-weakness since installing a perforated zinc platform for the hover early last season.

Never had B.W.D. or any serious disease in chicks, but I put the chicks in the hover at 100 degrees Fahr., and do not use nursery drawer in incubator.

I think *care and feeding* of breeding stock is a *very* important thing, and wants going into more, and am of the opinion that it pays to outcross with White Leghorns.

Really a 'clever man's' letter when I read through the above, but really facts, and my conclusions are merely sent to you to show how one can pick up good information sitting in the armchair at home from 'Eggs.'"

CURIOUS.

a recent issue of "Eggs" I referred to the offer ave received from a wealthy corporation to conte articles on feeding to this paper, provided inence was given to a certain commodity in which were interested; of our refusal to accept the les, and of their offer to pay us if we would write ourselves; also to the letter received from a lon Club, in which the writer stated he had been ed by a certain firm to write a series of articles his particular subject, and as he had no know- of the commodity, he would be grateful for any I could give him.

ave a letter this morning from Messrs. Quaker Ltd., stating that several corn merchants had ached them on the matter, and enquired whether are the firm concerned in this article.

ay state at once that such is not the case. We never been approached on this matter by Messrs. er Oats, Ltd., or anyone connected with them.

LAYING TESTS AND DEAD BIRDS.

s. E. Ogilvie writes sending me six reports l by the Clitheroe Laying Test. Her own bird at the end of the second period from roup. She notified, and subsequently wrote and asked why ird which had died was not marked as such on port, but no answer was received, and she felt at me that this omission was somewhat unfair to ers.

s. Ogilvie writes to add her protest to that of Mr. whose letter appeared in our previous issue. We received the sixth and final report, in which the tary states that he hopes to issue the certificates, ay all prizes not later than the end of May. No nent is made as to how many birds have died, n examining the report we find that 202 birds not laid, and 25 that have laid only one egg.

the end of the second month we are told there een a considerable drop in egg production owing to the appearance in the flock of colds, but a considerable increase in egg production could be looked forward to in the following month. No statement is made as to the output during this month, nor in any subsequent month is there any statement made as to the health of the birds.

(Continued at Foot of Next Column).

Correspondence.

EGGS BY WEIGHT.

To the Editor of "Eggs."

Dear Sir,—May I be permitted to answer some of the queries raised by "M.S.P.B.A" in this week's "Eggs"?

In the first place I would like to refer to his letter in the issue of 18th March. Therein he says that the Danish eggs are sold as 18lbs. to the 120, which really means that they are sold by weight. What is the difference between this and me selling eggs graded 1¾, 2, 2¼, and 2½oz., and getting a proportionate price for each size? If I understand "M.S.P.B.A. aright, he supports my methods in his first letter, but condemns them in his second letter. In my opinion, properly graded, clean eggs will sell better at prices proportionate to their weight, than eggs of various weights, from, say, 1½ozs. to 2½ozs. (without mentioning such extremes as "M.S.P.B.A." when he quotes ¼oz. to 3½oz.) mixed together, and put into a scale. You will find that all the best goods are graded. Think of Petit Poussin or Spring Chicken—these are always graded according to size and weight, because one knows they will find a better market. Take apples or oranges, the best are always graded. And so with eggs. A case of 2oz., 2¼oz., or 2½oz., will find the select market that the mixed eggs will never find. And in this I am not talking theory but practice. This week I have sent away 16 cases of eggs. One case was 1¾oz., eight cases 2oz., six cases 2¼oz, and one case 2½oz. The price obtained was 14s. (as quoted in Tuesday's "Telegraph"), plus 2s. 6d. per 120 standard 2oz. From this you will see that I got 14s. 5d. for the 1¾oz., 16s 6d. for the 2oz., 18s. 7d. for the 2¼oz., and 20s. 8d. for the 2½oz. This averages 17s. 5d. per 120, or 1s. 9d. per dozen. For some weeks up till this week I have had more 2¼oz. eggs than 2oz. Can "M.S.P.B.A." point to any man in the country, selling wholesale, getting better prices? I put it down to selling a guaranteed egg never more than three days old, and carefully cleaned and graded. And if we can only persuade our fellow-members to adopt the same methods and demand same basis of payment, I believe we should not only have the foreigner beaten, but the more advanced egg dealers would recognise that we were doing as much for them and the public as we were for ourselves. The dealer to whom I send handles upwards of three-quarters of a million eggs per week, so my last statement is not without material backing. We have got to honestly undertake to supply good goods; the struggle may be difficult for a while, but we are bound to win. A market has never been found wanting yet for the honest article.

"M.S.P.B.A." would like to know what I do with my eggs under 1¾oz. Mr. Newman in the Editorial of 8th April states what I do with them in the autumn. They are sent to the same retailer on the same price basis as the heavier eggs. At present I am not getting three eggs a week under 1¾oz., and these I generally give to the village children. Eggs over 2¾oz. we keep for our own consumption. I am afraid to send these out in case people always expect them.

If I may, I would like to explain my method of grading:—

1¾oz. eggs are all eggs between 1⅝oz. and 1⅞oz.
2oz. eggs are all eggs between 1⅞oz. and 2⅛oz.
2¼oz. eggs are all eggs between 2⅛oz. and 2⅜oz.
2½oz. eggs are all eggs between 2⅜oz. and 2¾oz.

In the autumn the 1½oz. eggs are graded in the same manner, i.e., one-eight of an ounce either side of the 1½oz.

The prices I obtain for my eggs are always better than those quoted for "Dutch all brown—18lb.," although my eggs do not average anything like 2⅝oz. From the 16 cases quoted above I think it will be found that my eggs average about 2⅛oz. "M.S.P.B.A." must be very lucky for a case of his mixed eggs to weigh 18lbs. per 120. A case of my specially-selected 2½oz. eggs would weigh only about 18½lbs. to 19lbs. per 120. A case of Danish 18lbs. eggs would average a little under 2½oz., I think, not 2⅝oz.

With regard to breakages, I am afraid I must admit to more than .1 per cent.; more like 1 to 1.5 per cent.

I submit that the methods outlined by "M.S.P.B.A.," viz., taking an empty box, weighing it, filling it with eggs of all sizes and weights, re-weighing it, and selling the eggs by the pound, will never find favour with the salesman of first-class goods. It might obtain with rough and ready country markets and higglers, but would never be accepted by the first-class trade. Personally, I take as much pride in the appearance of my eggs when they leave the farm as I do in some of the better birds that lay them.

No, No, Mr. Editor. Our idea is to improve our marketing, so as to beat the foreign egg. "M.S.P.B.A.'s" methods will worsen our position.

Will some other producer of Guaranteed Eggs now come forward and condemn or support my arguments?

Apologising for such length.

Your sincerely,
"A CORRESPONDENT."

THE SALE OF EGGS.

To the Editor of "Eggs."

Dear Sir,—Surely Mr. Burn-Murdoch in your issue of the 29th is not really serious when he says: "All of us who sell our eggs at less than 2s. per dozen are fools, a nuisance to ourselves, and that we do damage to hard-working people who have more sense, and we should get out of business as soon as possible."

I feel sure many of us commercial egg farmers will agree that this is rather a violent statement to make, and very much open to criticism. The principle preserving is good, but to some of us not always co venient, and after referring to last year's accounts, would mean that for about four months in the ye say, March to June, our regular customers would ha to go elsewhere for their eggs, and this is where t foreigner would score. Further, we should have look for fresh markets, as naturally, our present c tomers would drop us.

In theory this idea is no doubt sound, but in pr tice I for one do not agree, and I am a hard-work farmer, and have no possible intention of getting of business, which gives me a satisfactory return my capital outlay.

Yours truly,
COMMERCIAL EGG FARMER

EGGS BY WEIGHT.

To the Editor of "Eggs."

Dear Sir,—Your correspondent, J. H. Bu Murdoch, propounds an interesting scheme maintaining the minimum price of eggs at 2d. tells us that when his supply of eggs exceeds demand at that price he pickles them, but at w minimum price does he eventually sell his pick eggs? Presumably at 2d.

Of course, if he is in the enviable position being able to sing with the "Jolly Miller," "I c for nobody, no not I," well and good. Otherw I fail to see how he can eventually ignore the h fact that the price of any commodity is regula by the rules of supply and demand.

Yours faithfully,
HUGH M. BAKER

DANGEROUS LAMPS.

To the Editor of "Eggs."

Sir,—May I warn your less experienced rea against the use of tin lamps, in which the burner c is soldered on to the oil container.

Brooder lamps should be of copper, both the tainer and collar which should be brazed on.

If a pair of little semi-circular troughs are filled with water on top of the oil container it help keep the oil cool and moistens the dry, hot air.

"ARDENT.

HANTS COUNTY LAYING TRIALS.

Report of Seventh Period, ending 28th April, 1925. Fi are eggs for period and total points to date respectively:

Section A.—H. R. Hunter (W.L.), 90, 3273; A. F. C. Hold (Pen 1) (W.L.), 81, 3177; A. F. C. Holdaway (Pen 2) (W.L. 2938; Capt. A. Munro-Spencer (W.L.), 77, 2845; R. McKenzie (74, 2736; Capt. H. C. Harper (B.L.), 84, 2577.

Section B.—Mrs. J. H. Drew (Ut. Buff Rk.), 86, 3787; M McKenzie (W.W.), 76, 2948; Capt. D. W. Gunston (W.W.), 90, Mr. J. H. Thompson (W.W.), 67, 2733; Capt. D. W.Gunston (P (W.W.), 68, 2729; Mr. R. H. Hunter (R.I.R.), 91, 2688.

PORRIDGE AND RICKETS.

To the Editor of "Eggs."

ear Sir,—You have last week an interesting e on "Porridge and Rickets," by which you an oatmeal porridge. The virtues of oatmeal ridge are no doubt great, although it has serious iciencies when used alone. In my opinion—I y say in my positive experience—milk does not tify those deficiencies so well as the addition bran, and further, I should like to say that olemeal (wheatmeal) porridge is of altogether ater value—as a human diet anyway.

lthough your pages are concerned with poultry ds, you may perhaps admit a warning to your ders on the subject of their own table.

Iuch propaganda has gone on of late years on merits of wholemeal bread, and those merits , I think, of paramount importance, but what ot known by the majority of consumers is that uine wholemeal bread is extremely difficult to ain. The reason of this is that so many millers some reason or other extract the broad bran—ital constituent. Bakers are indifferent and ir customers ignorant, and thus the supposed efits are not secured, because an inferior **brown** (not wholemeal) is being used. I cannot lay much stress on this difficulty of securing a uine wholemeal loaf. Bakers are often orant themselves, and will give an assurance t a loaf is made with genuine wholemeal when s really deficient in the respect mentioned. I e even bought bread bearing the label of a ervedly reputable firm, and found that the individual baker who made the loaf was deceiving public and supplying an inferior brown loaf. now get my wholemeal from a local miller, and e the bread made privately.

Yours faithfully,

"CERES."

R.I. RED HEN RECORD (BOUCHER).

To the Editor of "Eggs."

ear Sir,—I see in last week's copy of "Eggs" tice of the death of a Rhode Island Red hen ly owned by Mr. E. C. B. Boucher, which is ned as a **World's Record** hen. In view of the eping nature of this claim I should like to ask, ugh the medium of "Eggs," what evidence can roduced by Mr. Boucher in proof of this statet of records, especially in view of the fact that ecords in any way approaching this has at time been made in any official test in any part e world?

reover, this record is entirely unsupported by official laying test records, made by Mr. her himself, who, so far, has never entered a ic pen in any official laying trial. These trials rendered an enormous service to the public in providing proof of what breeders' best birds can actually do, and the evidence is impartial and independent. We have, therefore, a perfect right when extraordinary and unsupported claims to World's Records are made, to ask for the proof of it. The best breeders who continually prove their skill by outstanding performances in the public trials would certainly regard this record as impossible, and, as a breeder of R.I. Reds for thirteen years, I for one should certainly not accept this record unless supported by impartial bona fide evidence.

Yours faithfully,

W. M. GOLDEN.

Re INCUBATION AT 700 FEET ALTITUDE.

To the Editor of "Eggs."

Dear Sir,—With small well-known tank machine and **capsule filled for 1,000 feet** I keep thermometer at 105 from end of August to middle of April, my hatching season, variation 106 to 104, moisture tray always wet, and I often have half the hatch out on 20th day; all worth keeping before the end of 21st day. By replacing, infertiles from broody hen, when possible, I hatch from 35 to 54 out of 56 eggs the machine will hold, and considering cockerels run with 20 to 30 hens in the laying houses I am satisfied. Rearing losses are often nil, and not five per cent. in six hatches since last August.

Incubator room is an old cottage, stone floor, facing north-east, large open fireplace, temperature of course often very low. Do you think if your correspondents ran at one degree extra heat they might get same results? Eggs mostly R.I. Red, but also from Sussex cock and White and Exchequer Leghorns (pure).

Yours faithfully,

HAROLD G. E. CROSS.

Dartmeet, Princetown.

REGISTRATION OF EARLY-HATCHED PULLETS.

To the Editor of "Eggs."

Dear Sir,—The following may be of use re above :—

No.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. (25 days)	6 mths. Total.
Hatched January 1st, started July.							
20	14	14	12	14	16	13	83
22	10	14	15	10	11	10	70
24	—	—	—	19	20	15	54
26	6	9	Broody	6	21	16	58
27	15	12	—	—	12	14	53
Hatched 26th January, started July and August.							
31	17	17	—	—	7	16	57
34	16	11	—	1	18	19	65
37	15	—	—	6	16	16	53

The above are records of R.I. Red pullets, hatched last year from two well-known breeders' eggs. It would appear difficult to compare, say, No. 22 and No. 34. The latter has laid many more eggs this month than 22, but I unfortunately have no record for March.

The conditions here are not favourable to heavy laying—very wet peaty soil, exposed.

HAROLD G. E. CROSS.

HOUSING.

To the Editor of "Eggs."

Dear Sir,—Referring to Mr. Martin Gray's paper on Housing. There are certain points in it that I feel bound to criticise. There are other points that, being matters of opinion, I shall not discuss.

On page 266, column 1, discussing Apex houses, he says that a house of 9 ft. high and 7 ft. wide will have angles of 60 degrees at base. Actually these angles are 68¾ degrees. In pointing this out I am not advocating the Apex house, as I agree that the position of dry mash hoppers and nesting boxes is a difficulty, to say nothing of other objections.

Square houses certainly are cheaper than the rectangular type, but Mr. Gray's figure of 14 square feet as the saving in wall area of the 6 ft. by 6 ft. over the 9 ft. by 4 ft. is excessive, the correct figure being 9 square feet. This represents a saving of approximately 3s. only at the same rate as Mr. Gray takes for his 5s. saving for 14 square feet. A circular house, if practicable, would enclose the greatest area in proportion to wall area.

Comparing wood as a material for houses with brick or concrete, Mr. Gray says it is very durable providing it is properly looked after, and not very expensive. He might also have added "provided it is properly used."

Very often wooden houses are not given a fair chance of life when damp is allowed to soak up from the ground or to leak through the roof.

I quite agree with Mr. Gray about the unsuitability of corrugated iron for roofing material for the same reasons.

Criticising its use on a neighbouring poultry farm I was told that the reason was because it was required to utilise the water off the roof for the birds' drinking purposes, but the ordinary smooth felt as now generally used is quite suitable for this, so this removes the only advantage left for corrugated iron.

I admit that the corrugated iron is more durable than felt when the latter is put on in the usual way. Mr. Gray also evidently puts it on in the same way. This way, however, is all wrong. The proper way to put on felt is to use no battens or nails whatever on the top surface. These always induce moisture to collect under the battens, resulting in rotten battens and a liability to leak through the nail holes, especially when the n rust away. If there is any weakness in the raft they will bend under snow and let the water in once, as I have seen happening. The felt sho be turned over and under the projecting roof boa and nailed underneath in an upward direction, all nailing from the top should be avoided.

No wind can possibly get under the felt if job is properly done, and the roof should be durable as corrugated iron.

It has always been a mystery to me as to poultry farmers and appliance makers got idea of using battens on felt roofs, for the meth that I have described is the usual method in other buildings.

The felt can be laid in whichever direction ma least cutting, provided the overlaps are st together with the black solution supplied for purpose.

As to sliding doors, they never fit so tightly the hinged ones. I think the hinged door is preferable if provided with means of hooking it the wall, when open. A door should never hinged on the corner of a house, however.

Yours faithfully,

A. STEWART BUCKLE

MALPAS UTILITY POULTRY CLUB.

Fifth Report.

Egg production during the month has been very good, Light Breeds' Section having come along well. There have three deaths.

EGG PRODUCTION OF LEADING BIRDS.

White Leghorns.—Mr. Warwick Rogers, 107 eggs; Mr Measures, 91; Mr. W. Measures, 87; Mr. H. Smith, 87; Mr Baylis, 85; Mr. C. L. Crosse, 80.

A.O.V. Light.—Mr. O. Rawlinson, 95; Mr. W. Crump, 93; William Taylor, 91; Mr. P. E. White, 86; Mr. C. Mallon, 81; J. R. Milnes, 76.

White Wyandottes.—Mr. J. Richradson, 106; Mr. and Mr H. Done, 106; Mr. S. Howell, 99; Mr E. J. Stone, 95; Mr. G. Wa 94; Mr. J. R. Milnes, 91.

A.O.V. Heavy.—Mr. R. Howard, 113; Langford Poultry F 111; Mr. H. Harold Lloyd, 95; Mr. R. Howard, 90; Mr. W Robinson, 90; Mr. A. V. Willis, 87.

NATIONAL DUCK EGG-LAYING TEST, 1924-25.

HELD AT BENTLEY, SUFFOLK.

Report for Sixth Period, 26th March to 22nd April, 192

Ducks.—Egg production is again satisfactory, the averag 4 weeks being 24.44. Flock average for 24 weeks is now 81

Total eggs collected—22,297 first grade, 151 second grade eggs weighing under 2¼ ozs.).

Highest average per duck in Test is retained by Mr. Godsmark (Sellinge, Sussex), whose Pen of 3 White Ru have now 371 eggs to their credit. This pen therefore lead "Daily Mail" Cup.

Health of flock continues to be excellent. There has been one case of septic feet, probably due to the ducks trapnested on fresh grass runs instead of on boarded floo formerly. The labour involved in moving the trap runs to grass is trifling and no cleaning is necessary.

EGG PRODUCTION OF LEADING PENS.

Section 1.—Championship (5 **Ducks).**—Cavanagh, Miss (F. & W.R.), 564 pts.; Long, Capt. R. A. (K.C.), 509 pts.; Ch & Son (K.C.), 495 pts.; Johnson, R. A. & A. M. (W.R.), 494

Section 2.—Khaki-Campbells (3 **Ducks).**—Dickson, A. N. pts.; Maunder & Colson, 322 pts.; Brown, Oscar C., 318 Bell, Miss Harrison, 314 pts.

Section A.—Indian Runners (3 **Ducks).**—(a) Fawn and Runners: Fox-Brockbank, A. H., 274 pts.; Streatfield, Mrs 274 pts.; Carrington, H. B., 271 pts.; Clark, Ben, 256 (b) White Runners: Godsmark, H. S., 371 pts.; Johnson, R. A. M., 295 pts.; Bullmore, E. & T., 292.

Section 4.—Buff Orpingtons (3 **Ducks).**—Lucas & Powe pts.; Malet, Mrs. Wyndham, 234 pts.; Stevenson, A. F. M., 22

Section 5.—Any Other Breed (3 **Ducks).**—Gardner, F., 287 Henneppe, Dr. T., 272 pts.; Van Bergen, Mrs. E., 245 pts.

Some Information on Ventilation and Lighting, also Span Roofs versus Other Roofs.

By "**APPLIANCE MAKER.**"

Recent lengthy correspondence in "Eggs" on above ubject reveals the fact that very little is as yet known r understood about the laws governing ventilation. he conflicting views merely prove that ventilation and ousing, as generally employed to-day, are nothing but compromise. The controversy centring on span oofs *versus* lean-to, I venture to state that the former ; the only type that offers the slightest chance for a ependable ventilation under all weather conditions, rithout resorting to fiddly gadgets. As a manufacturer, am bound to be suspected of bias—this I can retute y stating that I am making any sort of house to suit lients, though I hold decided views of my own as to hat is the correct form of house. Accordingly I make standard span-roofed house to any depth and length. his model is the outcome of lengthy tests on *my own tock*—comparative tests made with different breeds nd in various types of houses. The results left no oubt whatsoever which was the best type of roof. hese tests were repeated as applied to brooding, and there is a test for suitable housing it is brooding. ll the indications pointed undeniably to span-roof. herefore, I repeat, the only type of house I would ccommodate my own birds in is the span-roofed. lients who for many years have used lean-to's from rst-class makers do not spend thousands of pounds on y span-roofed houses, after having tried them, just r the fun of it.

However, it is not merely the form of roof that akes for correct conditions of ventilation, hence the ilures which some of the quoted experts have experi- iced in army huts, and so-called Lancashire cabins. iere are definite reasons why neither the owners nor eir stock were satisfied, and would space permit I uld enumerate the exact points.

To arrive at an understanding of the function of ntilation it should be remembered that air behaves actly like water—if heated it rises, if cooled it will ık. Thus when air inside a house warmed by live ock rises cold air must follow, else we would obtain vacuum. The latter takes place partially in badly- ntilated brooder houses—the rising air, which is not operly replenished, leaves a stagnant pocket, poor in ygen, mixed with CO2, and water vapour, thus wly but surely asphyxiating the chicks, and lower- g their vitality.

Strange to say, the lighter breeds appear to put up th more of this sort of treatment than the heavier eeds

The problem is how to obtain a constant inflow of sh oxygen-laden air to replenish the spent and aping warm air (if an escape has been provided) hout a floor draught. This point I have success- ly solved. In span-roofed houses the incoming air flows at such a rate, whether brooder or laying house, that no draughts in critical positions are set up, a feature of the utmost importance when brooding.

Odour and the state of litter are a sure sign whether everything is right or not inside a house. No matter how wet the conditions may be outside, with proper ventilation, the litter will remain dry and crisp for very long spells. Incidentally, damp litter tends to lower the temperature and vitality of your stock at the expense of laying and feeding, because dampness dissipates the natural heat inside the house, and also body warmth. Properly designed ventilation will scavenge every nook and corner of an unimpeded floor; this is only one reason why a dropping pit can scarcely be recommended.

Closely allied with proper ventilation is the subject of adequate lighting. Both stock and litter require a modicum of sunlight, and the span-roofs are designed to admit a maximum of this germicide. I may claim to be the pioneer of floor lighting, both in back and in the front of houses, as distinguished from ordinary window lighting. My pre-war biological work induced me to adopt this, and practice has proved me right, in spite of certain experts' ridicule a few years ago, to whom I mentioned the subject. We see this practice of lighting copied more generally now, which would be all to the good if the reasons were better understood, and the right sort of glass employed. All sorts of glass is used for lighting. I venture to state that there is not a single quality of glass used for live stock of any sort which allows of germicidal action, and it is unfortunate that it cannot be obtained from any British makers. I have tried and failed.

There is such a thing as too much and too little. Top lighting errs on the former, back lighting only on the latter. An excess of light has an unsettling effect on the birds, they get restless, a sort of sun neurosis setting in. Too little light, or incorrectly admitted, means tendency to broodiness, sluggishness, and lower egg production. How far-reaching the absence of sunlight is both to mature and chick life has been proved by the past season's falling off in egg yield, and the slow maturing of pullets. There is also a prevalence of deformed or badly-set bone, a sort of ricket, a defect which has its origin in generations of chicks reared under adverse conditions, such as badly-ventilated and insufficiently-lighted brooder houses.

The past season's disastrous brooder results have induced a great many poultry farmers to go back to the back-breaking method of small flock brooding. That there is something radically wrong with the conventional method of brooding is evident from the fact that all sorts of methods give good and bad results, all depending on the sort of season.

Constructionally, a span-roof has many advantages. They should stand any gales in the most exposed sites. Recent weather has been a good test of what the span-roofs will stand, whilst many lean-to's have been blown to pieces. A span-roof allows of a great variety in setting up inside fittings without cluttering the floor space, which is valuable. Further, it makes possible a decent working height at eaves, my houses being 6ft. or 6ft. 6in. minimum. Every corner is thus accessible without stooping. This is surely preferable to the other kind. With a good height goes facility for arranging inside fittings and adequate lighting of the front whichever direction you may favour to face your house. Liberality of floor space goes with proper feeding—it is fatal to skimp your birds of either, if you want more from them than droppings.

The span-roof is often condemned on the score of greater initial cost; this is surely wrong. A lean-to, it is true, has nothing to recommend it than first low cost; but there it ends—your stock is liable to colds and roup, the egg yield is erratic, and never approaches strain capacity, except in small flocks. It is smelly, dank and hard of access in the back.

It is liable to get blown down or damaged in a severe gale, and it does not improve the landscape.

Even if a properly-designed span-roof may appear to cost a little more, it has everything to recommend it. A sound business man, and most of us are in poultry farming for profit—I grant you not all of us see much profit—but thereby hangs a tale—is bound to consider the following points, which are provable:—

A greater egg yield than is possible by any other means, a maintenance of health in stock, greater working facilities.

The problem to-day is not so much to reduce building costs, but to increase the productivity of stocks to their strain capacity.

Why does stock of acknowledged high performance rarely, if ever, come up to this when out of the breeder's hands. Making ample allowances for change in diet, the principal cause of falling off from pedigree performance is to be found in unsuitable housing when such birds are grouped into bigger flocks. Though the laying of certain stocks at laying contests is truly wonderful, it is in reality a testimony of their hardiness. If birds in laying competitions were soundly housed outbreaks of roup would not occur, and a good many birds would give different yields, thus showing a higher average of soundly bred stock.

YORKSHIRE FEDERATION OF POULTRY SOCIETIES.

An Emergency Meeting was held in the Y.M.C.A., Leeds, on May 2nd, at 3 p.m. Mr. Harold Wales presided.

Report of the delegates from the Keighley Branch of the S.P.B.A. Messrs. Harold Walker, Alf Sawyer, and Mrs. Wilson attended.

In addition to Mr. A. J. Moore, Hon. Sec., about 20 members of the Federation were present.

The preliminary business dealt with was:—

(1) The application of a Poultry Society for Affiliation. The application was granted.

(2) The date of next Council Meeting at Otley. June 13th was the original day fixed for the meeting, and it had been hoped that Dr. Crowther and Mr. Bruce Wilcock would visit the Council. Mr. Wilcock had signified his ability and willingness to be present, but Dr. Crowther regretted he would be unable to attend that day. It was suggested that the matter of a change in the day of meeting should be referred to the Otley Society, by whose invitation the meeting was to be held at Otley. Mrs. Hawksworth intimated that there would be no objection to the day of meeting being changed. Finally, the re-arrangement was left in the hands of the Hon. Sec.

The programme for the meeting was notified, viz.:—Morning Session: A visit to the Federation Test grounds. Afternoon Session: Council Meeting at the Black Horse Hotel. Evening Session: A Public Meeting, with Lecture, in the Gladstone Hall.

Mrs. Vowles (Hon. Sec., Laying Test), in the absence of Mr. Frank Snowden, introduced the business concerning which this Emergency Meeting had been called, which was to answer the following question: "Is the Federation willing to accept newspaper publicity for the Laying Test on defined terms?" On behalf of the Allied Group of Newspapers, Mr. Frank Snow was asked this question. Mr. Snowden replied by return, immediately made a journey to London. As a result of the proposals were put before the Board of Directors of the La Test at a meeting held at Otley on Monday, the 27th April. Directors were unanimously of the opinion that the propo should be accepted, but, as they involved the association of name of a newspaper with the Test, it seemed advisable to sult the Council of the Federation. As time was an essentia the proposals, this Emergency Meeting had been called. proposals were:

(1) The newspaper would give a gold cup, value £5 £70, for the supreme pen, and a silver replica to the owne that pen.

(2) Weekly reports were to be issued, and up to £1 week would be provided to meet the extra cost of record etc., so involved.

(3) The reports were to be published in the newspaper a certain day each week.

The conditions were:—That the name of the newspaper app on all reports, e.g.:—The Yorkshire Federation Laying T associated with the name of newspaper. (2) That the we reports be issued only to this newspaper. (3) That the mon reports be issued to this newspaper 48 hours before they issued to any other newspaper. (4) That the arrangement to the end of the present test, but may be reviewed at that ti For obvious reasons the name of the newspaper was not divul

Mr. P. Wainwright (director) was of the opinion that publicity it was proposed to obtain could not but redound to advantage of the Test. Only a suspicion of disadvantage se to rest in one direction. The hypercritical might take excep to the partial monopoly obtained by a newspaper of certain tical opinions. He, personally, thought that poultrymen w naturally dissociate poultry news and politics. This view endorsed subsequently by another speaker.

Questions were put to Mrs. Vowles by various members, the following points were made clear:—(1) The Gold Cup comes the property of the Test, whether the arrangement is car on or is terminated at the close of the current period of the c petition. (2) No extra cost will be added to the wor of the Test. (3) There is no implication whatever that the posals involve any attempt on the part of the newspape obtain financial interest or control in the Test.

Mr. Hirst (Hunslet) proposed:—"That the Council exp their agreement with the opinion of the Board of Directors of Test, and recommended that the arrangements outlined by Vowles be carried to completion.

The motion was seconded by Mr. Harold Walker (Keigh and accepted unanimously.

Mrs. Vowles then gave the name of the newspaper: Daily Despatch," published in Manchester. She thanked Council for the support it had given to the directors. She c not leave this matter without expressing her thanks and ap ciation to Mr. Snowden. His personal energy in the early s of the negotiation, and his willingness to incur personal expe ture in a journey to London, was responsible for the final suc reached this afternoon.

Miss Hillerby (Castleford) proposed, and Mr. Godfrey se ded, that a hearty vote of thanks be conveyed to Mr. Snow This was carried with acclamation.

Mr. P. Wainwright made a personal statement concerning request of certain delegates to be supplied with the agenda p for the Council Meeting at least a fortnight before the da meeting. Mr. Moore intimated that this matter had been bro to his notice at Hull, and arrangements were in hand to co with the wishes of the delegates.

Mrs. Vowles notified members that the Test grounds woul open to visitors practically all day on May 15th and 16th, O Show days The Council Meeting then terminated.

LAINDON LAYING TEST (Seventh Period).

Section 1. Five Pullets (Light Breeds).—F. Freeborn (W 557 eggs; H. J. Thomson (W.L.), 523; T. Miller (W.L.), 482.

Section 2. Five Pullets (Heavy Breeds).—E. V. Bazin (R. 532; H. J. Thomson (R.I.R.), 499; W Belsham (R.I.R.), 448.

Section 3. Single Bird (Light Breeds).—East Anglian P.F. (W 137; Q W. Dillenz (W.L.), 131; Miss N. M. Grubbe (W.L.), 12

Section 4. Single Bird (Heavy Breeds).—C. Sheridan (W 139; H. Jones (R.I.R.), 138; H Bush (W.W.), 130.

Section 5. Gift (Any Breed).—E. V. Bazin (W.L.), 125; Dillenz (W.L.), 128; H. Maycock (W W.), 100.

Owing to two birds tieing for First-Class Certificate (hig individual score for month), the committee have decided to two. The winners are:—Miss N. M. Grubbe and W. Dillen eggs value 2s. 11d.

Scientific Poultry Breeders' Association.

COUNCIL MEETING.

A Council Meeting was held at the Memorial Hall, rringdon Street, on Wednesday, 6th May, 1925.

Present:—Mrs. Hunter (President), in the chair, ss N. B. Maddison, Messrs. J. G. Kitson, E. Bostock ith, John Smart, R. Fletcher Hearnshaw, E. J. ekings, A. Harold Paine, J. H. Dowden, and the cretary.

Minutes of the last meeting was read, confirmed, and ned.

A letter was read from Messrs. Hamlin and Co., licitors, expressing their willingness to answer legal eries through the columns of "Eggs," if the Council re of opinion it would be beneficial to members. The uncil instructed the Secretary to write Messrs. mlin and express their very great appreciation of the er which they gladly accepted.

The following letter was read from Mr. J. Prentice:

SCOTTISH LAYING TRIALS.

Dear Sir,—On the 16th inst. Sir Robt. Greig presented me h the S.P.B.A. Cup, which my birds won in the Scottish t, and I would like you to convey my thanks to the Council offering such a handsome cup.

am naturally proud of winning it for the first time, as it is first prize offered for egg-laying in Scotland, and, perhaps, s satisfactory to the Council to know that it was won by birds l and fed on S.P.B.A. lines."

Yours faithfully,

(Signed) J. PRENTICE.

letter was read from a member complaining that had purchased eggs from a breeder, and that the ulting chicks had commenced to die at the age of days, and were found to be suffering from B.W.D. riend, who had incubated eggs from the same source, had a post-mortem examination made by the istry of Agriculture on certain of his chickens which died, and their report was B.W.D. The writer ned his incubator, but did not disinfect it, obtained s from another source; a very good hatch resulted, , unfortunately, B.W.D. again showed itself after days. He is of opinion the eggs were no doubt cted in the incubator. One other hatch was also wing signs of the disease. The Council were of ion that unless proof could be obtained that the ks had been hatched from infected eggs, no action ld be taken in the matter.

he Secretary pointed out that when an outbreak of V.D. occurred the trouble commenced almost from time they were taken from the incubator, more ecially when the eggs were infected, and in this case writer had stated that the chicks did not start to off until after ten days. Further, that although the t-mortem had been made on the chicks hatched n the eggs which his friend had obtained from the e source, it was not stated that any post-mortem been made on the chicks hatched by the writer. writer had stated that he had written to the dor, and a letter had been received from her solici-, in which it was stated that she had no reason to pose that any eggs supplied by her were in any responsible for such outbreak, and that she would it no liability in the matter. Attention was drawn to the question asked in this letter as to what warranty, if any, was given when the eggs were supplied. The matter then dropped.

Application was received from the Secretary of the Gloucestershire Branch that a cup should be presented for the Gloucestershire Laying Test, open to members of the S.P.B.A. who were not members of the Gloucestershire Branch of the Society, competition to be for the Single Bird Section, and to be open to the Counties of Gloucestershire, Somerset, Herefordshire, and Worcestershire. It was pointed out that the Council had already granted a cup for the Gloucestershire Laying Test. After discussion it was agreed that the request should be complied with, but that the cup should be a minor one, and not of the same value as that granted where pens of birds were competing in the Test.

SECRETARY'S REPORT.—The Secretary reported that 66 new members had been elected during the month of April.

"EGGS" COMMITTEE REPORT.—Mr. J. G. Kitson, Chairman of the "Eggs" Committee, reported that the circulation was steady and the financial report was quite satisfactory.

TREASURER'S REPORT.—In the absence of the Treasurer, his report was submitted, and adopted, on the proposal of Mr. E. Bostock Smith, seconded by Mr. J. Smart.

FOOD PURCHASE SCHEME.—The Secretary reported that in the six weeks since the start of the scheme over £2,000 worth of food had been purchased for their members. Arrangements had now been made to supply the S.P.B.A. mashes, viz.:—The Chick Mash, Layers', Breeders', and Growing Mashes in lots of not less than five cwt. at the two-ton rates. Special endeavours were being made to still further extend the scheme.

Members highly appreciated the efforts of the Council in this direction, and general satisfaction had been expressed by those who had purchased foodstuffs. The prices of the mashes for the present week was:—

Layers' Mash	£11 5 0	Breeders'	£11 10 0
Growing Mash	£12 5 0	Chick Mash	£12 5 0

WELLINGHAM EXPERIMENTS.—The Secretary reported on the Wellingham Experiments. (The report will be found in another part of this issue).

BLOOD AGGLUTINATION TEST.—The Secretary reported that several members had written approving of the suggestion that facilities should be given in the Register to members whose breeding stock had been blood tested. The Council discussed this for some time, and it was agreed that such facilities should be given but conditionally upon *all* breeding stock being blood-tested. Certificates that such a test had been made should be forwarded to the Secretary or Editor of the Register, with the number of birds tested.

The Secretary reported that he had received a copy of advertisement from the "Wolverhampton Times," in which advertiser described himself as an "agent for members of N.U.P.S. and S.P.B.A." He was not a member of the S.P.B.A. Chicks and eggs were advertised at a very cheap rate; eggs being advertised as from trap-nested stock at 2s. per dozen. On enquiry they had found that the advertiser had only a small backyard in one of the poorest districts in Wolverhampton. It was agreed that the Hon. Solicitors, Messrs. Hamlin, should be communicated with, with a view to their taking action in the matter.

The next meeting of the Council was fixed for Wednesday, 3rd June.

FOOD PURCHASE SCHEME.

Members found the announcement that we were able to supply the S.P.B.A. mashes in 5 cwt. lots at two-ton rates of great interest, and already the demand has begun. Will they please notice that prices will fluctuate a little from week to week, and would, of course, depend on the state of the markets.

We are anticipating a very big demand for these mashes, and can now supply the Chick Mash, Growing Mash, Layers' Mash, and Breeders' Mash.

The prices are approximately the same as those quoted in last week's issue, but there are small variations in different parts of the country, and on receipt of a post card a Price List will be sent to any member.

It must be clearly understood that the mashes cannot be supplied in less than 5-cwt. lots at the prices quoted, and these will be found to be at least thirty to forty per cent. cheaper than many of the proprietary foods offered, and the quality of the ingredients is guaranteed.

THE S.P.B.A. EXPERIMENTS AT WELLINGHAM.

SATISFACTORY RESULTS.

It will be remembered that last year a small series of experiments under the control of Mrs. Pember and Miss Malcolm, was undertaken at Wellingham, the object being to ascertain what was the minimum amount of dried milk which could be used in combination with other foods, with a high protein content, to give us results equivalent to those obtained in the previous year, when two-thirds dried milk was used.

I drew up the following formula for the purpose: 20 lbs. bran, 45 lbs. middlings, 10 lbs. Sussex ground oats, 10 lbs. maize meal, 5 lbs. dried milk, 5 lbs. yeast, 5 lbs. soya bean meal. To this was added 30 ozs. of the following mineral mixture : 60 lbs. bone meal, 20 lbs. common salt, 20 lbs. powdered oyster shell.

The experiment gave satisfactory results, but we felt it was on too small a scale to justify our recommending it to our readers. This year it has been repeated with one hundred Light Sussex chicks. The result has confirmed that of last year's experiment, and it may be regarded as highly satisfactory.

Appended is Miss Malcolm's report :—

From the first week the birds have been in splendid health; two or three weaklings were killed, the rest were fed on the above dry mash at the 6th day and weighed every week, the weig being as follows :—

	Average weight.	Average increa
1st report (2 weeks old)	2.75 ozs.	
2nd report	4.34 ozs.	1.59 ozs.
3rd report	6.2736 ozs.	1.93 ozs.
4th report	9.27 ozs.	3 ozs.
5th report	13.022 ozs.	3.752 ozs.
6th report	16.744 ozs.	3.722 ozs
7th report	22.266 ozs.	5.522 ozs.
8th report	1 lb. 12.711 ozs.	6.445 ozs.
9th report	2 lbs. 2.288 ozs.	5.577 ozs.
10th report (11 weeks old)	2 lbs. 7.140 ozs.	4.852 ozs.

The fact that there were more pullets t cockerels in this experiment influenced weights, but the twelve heaviest cockerels put i the crates on May 1st at eleven weeks old weig as follows :—1 at 3 lbs. 5 ozs.; 1 at 3 lbs. 4 o 1 at 3 lbs. 2 ozs.; 4 at 3 lbs. 1 oz.; 4 at 3 l 1 at 2 lbs. 14 ozs.

The birds have had no milk to drink, and h been fed entirely on the above dry mash v half grain feeds of wheat, half of maize. T were sent out to colony at 5 weeks, and, tho the weather has not been good, have never loo back.

The chicks were raised entirely on the dry ma I have no doubt that heavier weights could h been obtained had the carbonaceous ingredie in the mash been cooked and the protein fo added, but it was not our object to attain he weights. What we were endeavouring to disc was a cheap commercial mash on which we c get the most rapid and economical developm and so far I think we have succeeded, but I hoping next year that we may be able to do a li better, not in getting quicker development, but finding a cheaper mash still. In fact, I want try something entirely different, but it is premat to discuss it now. The experiment has been very interesting one, and not the least import point has been the perfect health of the birds, the quick feathering to which Miss Malc alludes in her report. Weather conditions h not been very favourable, and the fact that t were able to do without artificial light at weeks is interesting.

Later we shall know what weight the cocke made.

THE INTENSIVE EXPERIMENT.

REPORT FOR APRIL (3rd MONTH).

I have received the following report from M Malcolm :—

"The pullets are now three months old. most marked improvement in their condition taken place in this month ; the birds now look v healthy and the colour in the shanks, etc., becoming normal.

Milk is being discontinued. Feeds are dry ma and half wheat and half maize as a grain feed [he house will be fitted up as a laying house ·ing the coming month."

\t about the the age of six weeks, the chicks, ıough otherwise perfectly healthy, looked some- at pale and anaemic in spite of the fact that a ntiful supply of fresh green food was fed daily, l the house is beautifully light and airy. To at cause this was attributable, it was impos- le to say, but I have never yet seen intensively- ›t birds—chicks or adults—with that bright, sh look, which is typical of those on free range. wever, a general improvement is noticed. One two cases of leg weakness occurred, but this s quickly checked by the addition of cod liver to the mash, otherwise chicks have been re- rkably healthy, and the mortality is very low. cockerels were all removed at six weeks old. Committee will visit Wellingham on the 15th.

APPLICANTS FOR MEMBERSHIP.

ke, Mrs. C. E., Millmoor, Sturminster Marshall, Wimborne, Dorset.
ombe, Miss Hilda. Highclere, Newbury, Berks.
vor, D. S., 31, Northnelds, Tywford, Berks.
ton, Miss Ivy, Thorneywood Cottage, Sutton-on-Sea, Lincs.
l, Edwin L., Beechley, Cauford Heath, near Wimborne.
sley, W. Scott, "Forelands," Weston-Super-Mare.
ber, A. A. Ramsey, Woodlands P.F., Croydon Lane, Banstead, Surrey.
ngstone, A. P., Highfields, Kelvedon, Essex.
aders, A. V., "Linkhurst," Stonegate, Sussex.
, H. F., Glenbrook, Delgany.
re, Wm., 41, Belville St., Greenock, Scotland.
er, C. F., 80, Kimberley Avenue, Seven Kings, Ilford.
ley, F. J. B., Arnewood P.F., Ashley, New Milton, Hants.
sfield, C., Wixenford, Wokingham, Berks.
ıolson, R., Tuthill, Therfield, near Royston, Herts.
erman, Gerald, Rhode Farm, Selborne, Alton, Hants.
ean, S., 4, Grace Road, Aintree, Liverpool.
ster, Stanley, Mill Hill Bleachworks, Bolton, Lancs.
son, Samuel S., 12, Ainsworth Houses, Tony Moor, Bolton, Lancs.
s, J. R., Groves, Peasmarsh, Sussex.
cer, Capt. G. W., Cropston, Leicester.
art, J. V., South Essex Poultry Appliance Depot, High St., Hadleigh, Essex.
ignol, A. M. Le, La Chaumiere, Millbrook, Jersey, C.I.
rts, Mrs. C. H., Rhyd-y-Bill, Ruthin, North Wales.
s, Arthur, Gowrie Cottage, Perth Road, Blairgowrie, Perthshire.
ards, G., Ladbroke House, 592, Gladstone St., Peterborough.
inson, Mrs. A., Brooklands, London Road, Chelmsford.
ell, A. T., Silver How, Mill Lane, Teignmouth, S. Devon.
all, Joseph, Avondale, Garstang, Lancashire.

THE MIDLAND FEDERATION.

e monthly Council Meeting of the Midland Federation was at the New Inns Hotel, Handsworth, on Friday last, May Mr. Maurice H. Brady being in the chair.

was regretted that a loss of over £223 had been incurred e Midland Festival. It was accounted for, in the first ace, by the fact that stand space had not been let so exten- as in previous years, that it was too close to the Birming- show, and there was a considerable reduction in their takings e gate.

th regard to the Subscription Prize Fund Scheme, which een carried through at tremendous strain by the small staff, Ion. Organising Secretary, Mr. A. H. Braim, stated that h much remained to be done before finally clearing up the ie, a balance of over £500 would be gained as the result of united efforts. The Hon. Organiser and General Secretary, F. Shuker, and staff were heartily thanked for the splendid

half-yearly report of the Midland Laying Test was ten- and although a small financial loss was reported, the s of production and general health were considered splendid und. Much of the loss had been brought about through of the terrific gales, which had raged at different times gh the winter, destroying numbers of pens and playing with wire netting. Despite the bad weather no case of or Avian Diphtheria had developed.

The application from poultry-keepers in the Coseley district, urging for Federation action in trying to get restriction removed was considered, and before deciding on future action, it was pointed out that the National Poultry Council had been informed, and a reply was awaited.

The Hon. Organiser was asked why he had omitted to apply for Registration of the Midland Test under the N.P.C. Laying Trials' Registration Scheme in time to be included in the first batch, and he replied that owing to enormous pressure of work the matter was overlooked.

Following a report of the Midland Laying Test Officials, it was decided to appoint a committee to prepare a scheme for a new and up-to-date Midland Laying Test plant to be laid down in the near future on a new site near Birmingham. The scheme in the rough budgetted for an outlay expenditure of a figure approaching £5,000. Two hundred and fifty houses would be laid down, giving accommodation for 500 pens of birds, five birds to a pen. Between £250 and £500 would be offered in prizes to poultry breeders competing.

A Special Committee Meeting was called to take place on Wednesday, May 6th. Unanimous support was given to the proposal to hold a Midland Federation members' outing to Wembley.

Mr. H. C. Hickling, J.P., at the close of the meeting, expressed his satisfaction in the excellent manner the Federation were surmounting their difficulties which augured for a flourishing future now that the majority of the obstacles had been removed.

POST-MORTEMS—Continued.

G. T. R. The only lesions to be found in either of these two chicks were in the brain, both showing considerable congestion of the cerebellum. The other organs were remarkably healthy in appearance, and no parasites of any description were to be found upon microscopical examination of the bowel contents. It seems incredible that they should suffer from Polyneuritis, unless the quality of the foodstuffs were extraordinarily bad; but the fact of others responding to the marmite treatment shows that vitamine deficiency is at the root of the trouble. Even better results have been obtained by a preparation named Metagen, both in puppies and birds ; in fact, it is tested for efficiency on pigeons fed on a purposely deficient vitamine diet until complete paralysis occurs, Unless complete recovery takes place in a few hours after administration, that particular batch of Metagen is not placed on the market.

S. The post-mortem examination of the B. B. Leghorn pullet showed that the gizzard walls had been perforated by pointed pieces of glass, with the result that peritonitis had occurred.

V. W. The post-mortem examination of the chicks showed that there was a violent inflammation of the mucous membrane of the proventriculus or stomach. There were no other lesions to be discovered, and this points to some local irritant that they are getting rather than to some infectious trouble. The cause is most likely in the food, and a careful inspection of this might throw considerable light on the subject. Treatment consists in endeavouring to soothe the inflamed surfaces, and at the same time eliminate any irritant that may be present. Ten drops of medicinal paraffin would answer this purpose, given individually, or by adding 2 per cent. of the oil to the mash.

V. H. The post-mortem examination of the hen showed that the carcase was greatly emaciated, and that there was a chronic muco-enteritis caused by the presence of round worms with which the intestines were packed. I should advise treating the remainder for worms and burning the litter and droppings to destroy both worms and their ova, and to disinfect the floors of the houses and runs as thoroughly as possible. To treat, mix one teaspoonful of powdered Pomegranate root in the mash for fifty fowls, after a preliminary fast of twenty-four hours.

DUCK QUERY.

R. J. R. In answer to your enquiry. In my opinion one-inch boarding makes the best floor for a duck house. I prefer it to cement, because it can be ventilated and consequently the bedding does not get so wet. There should, of course, be a space of at least six inches between the floor and the ground. If rats are troublesome the bottom of the floor can be covered with half-inch mesh wire netting. S. S.

CORRESPONDENCE—Continued.

CO-OPERATIVE MARKETING OF BRITISH EGGS.

To the Editor of "Eggs."

Dear Mr. Newman,—It appears to me that an organisation to achieve this end throughout the whole country will be doomed to almost certain failure unless cohesion can be secured between the constituent producers. If the idea has not been already discussed and turned down for convincing reasons, I would suggest to you that general farmers, through the Farmers' Union, and poultry farmers, through National Poultry Council, should be asked to state whether, if promises were secured from others controlling a sufficient percentage of the egg production of the whole country (say 70 per cent.) in the aggregate, each individual would agree to market through the organisation either his whole output or the major portion of this.

If such an agreement could be drawn up which would be legally binding, and would hold for one year, producers signing it would be making a sporting effort to help themselves and the trade of the country, whilst the organisers would have one very great danger and difficulty in working a scheme removed for one year. I was present at a small local meeting of the Farmers' Union recently, and these men would not credit the statement that general farmers produced anything like three-quarters of the output of the country in eggs. They want educating, and even if educated it might be difficult to get them to enter into bond, but I am sure, from such experiences as th executive of bacon factories have had, it would b very much more difficult to inspire such loyalt in them as would resist the lure of an odd penn or so a dozen for their eggs from an enemy o the scheme devised for their benefit. Wit apologies for troubling you with what is probabl not a practicable suggestion for some reason o other of which I am ignorant.

Yours sincerely,

G. PERCY JOY.

REGISTRATION OF EARLY HATCHED PULLETS.

To the Editor of "Eggs."

Dear Mr. Newman,—With reference to th above, I do not think Mr. Chitty's suggestion will meet the case, because the only birds whic will be eligible for such a test would be Januar hatched Leghorns. Very few February-hatche birds or heavy breeds hatched earlier would b likely to be in production for three months befor the pullet moult in the autumn.

What is wanted is a status for the Februar hatched bird which comes into lay at the end o July and during August, and goes into a pulle moult during October. The average pre-moul production of these birds is about two months— sometimes less. These birds make most valuabl breeders, but under present rules they cannot b included in the breeding pen with other L2 birds The only thing left for a person like myself to d is to make up a special pen and use the eggs fo one's own use; they are almost unsaleable throug the S.P.B.A., because members insist on the L standard. I offer them for sale as stock birds a the end of the season, but if they have not passe the L2 standard people will not buy. I am no so much interested in a standard for registere pens as for a status for these birds to be include in a general breeding pen of 50, 100 or more birds The basis of the solution seems to be found in you own suggestions of a year or so ago. You suggested then, as a basis of selection, that the production of the first month be recorded, and that note be made of the interval between the batches You also said, I believe, that the trap-nest record of the first six weeks of production was all tha was necessary. Does this not afford a simpl solution? I suggest that the standard be this 30 eggs for any period of 50 days between 1st Jul and 15th October. This should cover everythin hatched before the end of February, light or heav breed. Grade of egg to be recorded after th moult, say in January.

Yours truly,

A. H. CAPPER.

Market Report.

ɪINISTRY OF AGRICULTURE RETURNS, WEEK ENDING, FRIDAY, MAY 8th, 1925.

GRAIN AND FEEDING STUFFS.—Small supplies of British
ıeat are in good request and recent prices are fully main-
ined at Bristol and London, while at Hull the average quota-
ɔn has advanced 8d. per cwt. on the week. Imported wheats
e in improved demand and dearer at most centres, No. 1
unitoba now averaging 15s. 1d. per cwt. as compared with
. 6d. a week ago. British feeding barley is in fair request at
gher values, and imported descriptions have also advanced
ghtly at London and Bristol. Home-grown oats are in
ıall supply and white varieties are dearer at most
arkets, while black and grey also realise more money at some
ntres. Foreign oats are scarce and have a dearer tendency.
ize is in fair request at slightly higher prices.

Offals generally are in fair demand at late rates, but coarse
ddlings are 5s. per ton dearer at Hull and Bristol, and at
e latter town imported pollards and rice bran make more
ɔney. Barley and maize meals continue to advance and now
erage £11 16s. and £11 7s. per ton respectively. Linseed cake
Bristol and Hull is in better request and 5s. per ton dearer,
ile at Liverpool cotton-seed cake has advanced a similar
ıount.

MILLERS' OFFALS.—Bran (British): Bristol, £8 17s; Hull,
12s; Liverpool, £8 5s; London, £7 10s. Broad Bran: Bristol,
0 2s; Hull, £9 2s; London, £8 17s. Middlings—Fine (Imported):
ndon, £9 7s; Coarse (British): Bristol, £9 2s; Hull, £8 15s;
verpool, £8 5s; London, £8 7s. Pollards (Imported): Bristol,
12s; Hull, £7 5s; Liverpool, £7; London, £7 10s. Rice Bran:
istol, £7 7s; Liverpool, £7. MEAL.—Barley Meal: Bristol, £11
; Hull, £11 8s; London, £12 5s. Maize Meal: Bristol, £12 5s;
ill, £11 5s; Liverpool, £10 17s; London, £11. Maize Meal (S.
rican): Bristol, £11; Hull, £9 15s; Liverpool, £9 12s. Maize
rm Meal: Bristol, £11 5s; Hull, £10; London, £9 7s. Maize
uten Feed: London, £10 5s. Locust Bean Meal: Bristol, £9 15s;
ill, £9 15s; Liverpool, £9 10s; London, £9 15s. Bean Meal:
istol, £13 15s; Hull, £11 8s; London, £13. Fish Meal: Bristol,
; Hull, £20; Liverpool, £18; London, £20 10s

EGGS AND DEAD POULTRY.

The demand for eggs is of a limited nature, and with good
pplies marketed, prices show little change, although secondary
alities have weakened slightly. Recent rates are maintained
dead poultry, but there is little inquiry except for best
ality hens and ducklings.

Week-end Prices—Eggs (per 120): British, 13s 9d, 12s 6d; Irish,
6d, 13s 0d; Danish, 14s 9d, 13s 9d; Dutch, 14s 6d, 13s 6d;
ench, 14s 0d, 13s 6d; Belgian, 14s 0d, 13s 6d; Italian, 13s 9d,
3d; Egyptian, 9s 9d, 9s 0d; Russian, 12s 0d, 11s 6d; Styrian,
6d, 11s 6d; Lithuanian, 12s 6d, 11s 3d; Polish, 11s 9d, 10s 9d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 3d, 1s 9d; Irish,
10d, 1s 3d; Others, 1s 11d, 1s 5d. Ducks, 2s 2d, 1s 4d. Geese,
3d, 1s 0d. Turkeys, 1s 6d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 1s 4½d; Second, 1s 3½d. Birmingham:
st, 1s 3½d: Second, 1s 3d. Bridgwater: First, 1s 5d; Second,
4d. Chelmsford: First, 1s 4¼d; Second, 1s 3d. Doncaster: First,
5d; Second, 1s 4d. Dorchester: First, 1s 3½d; Second, 1s 3d.
eter: First, 1s 3d. Hereford: First, 1s 1d. King's Lynn: First,
3d; Second, 1s 2d. Llandilo: First, 1s 2d; Second, 1s 1d. Mold:
st, 1s 2d; Second, 1s 1d. Newport (Mon.): First, 1s 4d; Second,
3d. Norwich: First, 1s 4d. Oswestry: First, 1s 2d. Penzance:
st, 1s 1d; Second, 1s 0d. St. Ives (Hunts): First, 1s 4½d; Second,
3d. Salisbury: First, 1s 2½d; Second, 1s 2d. Skipton: First,
3d. Truro: First, 1s 1d; Second, 1s 0d. *Carlisle: First, 1s 4d.
erby: First, 1s 4d. *Ipswich: First, 1s 6d; Second, 1s 3d.
ncoln: First. 1s 4d. *Shrewsbury: First, 1s 3d; Second, 1s 2d.
ork: First, 1s 4d; Second, 1s 3d.

FOWLS.

Per lb.—Birmingham: First, 1s 8d; Second, 10d. Doncaster:
st, †5s 0d. Exeter: First, 1s 8d. Hereford: First, 1s 8d.
ndilo: First, 2s 8d. Newport (Mon.): First, 1s 9d; Second, 1s 4d.
ıro: First, 1s 4d. *Derby: First, †5s 9d; Second, †4s 0d.
swich: First, 1s 9d. *Lincoln: First, †5s 6d; Second, †4s 0d.
rewsbury: First, 1s 6d; Second, 1s 4d. *York: First, †5s 3d;
ond, †4s 3d.

DUCKS.

Per lb.—Exeter: First, 1s 8d. Llandilo: First, 2s 8d.

* At these markets the prices quoted are for sales by pro-
ers direct to consumers. At other markets prices are those
d to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, May 13th, 1925.

CONTENTS.

EDITORIAL ... 309
MODERN POULTRY FEEDING ... 311
ANSWERS TO QUERIES ... 312 and 324
POST-MORTEMS ... 313 and 323
S.P.B.A. ... 314 and 321
CORRESPONDENCE ... 315 and 324
HANTS COUNTY LAYING TRIALS ... 316
MALPAS U.P.S. LAYING TEST ... 318
NATIONAL DUCK EGG-LAYING TEST ... 318
SOME INFORMATION ON VENTILATION AND LIGHTING, ALSO SPAN-ROOFS *versus* OTHER ROOFS ... 319
YORKS FEDERATION OF POULTRY SOCIETIES ... 320
LAINDON LAYING TEST ... 320
THE MIDLAND FEDERATION ... 323
MARKET REPORT ... 325

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to the poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue. It is hardly necessary to add that the earlier in the week we receive copy the better it is for everyone concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS, per line, extra 9d.
DAY-OLD CHICKS, „ „ 1s.
DAY-OLD CHICKS „ „ 1/6

The number of letters, punctuations and spaces between words should be totalled, when the following table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount, will not be inserted.

Advertisements must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s. 8d.. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office
FIRST POST FRIDAYS
for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY, and TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS, for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent, and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

EGGS.

FOR SALE.

Handsome Blue-Laced Andalusians, also Black Minorcas; 4s. sitting, replaced; delivery.—Speed, Fiskerton, Lincoln.

Indian Game, Pure Eggs. from pedigree winners; fine, healthy stock; free range.—Mrs. Holloway, Sneade, Churchstoke.

How much mash do your chicks waste?

It's the wasted feed that makes chick rearing costly.

Feed your chicks the Ful-O-Pep way on Ful-O-Pep Growing Mash and you not only save feed wastage, but time and trouble as well.

In the Ful-O-Pep way no hot mash has to be made—the Ful-O-Pep Growing Mash that is not consumed never sours—it is never "too moist" so young chicks don't get bowel troubles—chicks don't trample and mess on the Mash and spread disease—and you only visit them once a day.

A chick only requires 12½-lbs. Ful-O-Pep Growing Mash to bring it to maturity.

That is why it pays to feed the finely ground, easily digested, perfectly balanced Ful-O-Pep Growing Mash straight from the red-striped bags into the hopper.

For complete information on this most vital subject, write for your free copy of the Ful-O-Pep Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

FUL
TRADE -O- MARK
PEP
GROWING MASH

NO MIXING: NO HEATING WATER: NO TROUBLE

The Ful-O-Pep Guide has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Ful-O-Pep Poultry Feeds are made and guaranteed by Quaker Oats Ltd., 11, Finsbury Square, London, E.C.2.

EGGS.

FOR SALE.

Large Brown Eggs for hatching, ex
tion and Utility Barnevelders; 6s. 6d.,
6d., 20s. dozen; u.r.—Sydney Hiller. Stan
Herts.

Barnevelder Eggs (Baroness Brien
from 7s. 6d. dozen. White Wyando
(Cam-Barron), from 6s.—Mrs. Staff,
Manor House, Burston, Diss, Norfolk.

Eggs from my Utility Winners, Cry
Palace, Olympia, Birmingham, York,
Light Sussex (Cook's, St. Mary's Or
White Wyandottes (Frank Snowden), W
Aylesbury (Abbott's), Buff Orping
Khaki-Campbells (Long); all 6s. per do
Carriage paid. Also Turkeys (Abbott's)
Geese Eggs ready.—T. A. Spray, Bar
Hall, Newark (M.W.W.C., M.P.C., S.P.B.

Sittings. Buff Orpington Ducks, Co
direct; free range stock; 7s. 6d. dozen,
riage paid.—Edward Ricketts, Moor Ho
Norman Road, Belvedere.

Exchequer Eggs, 5s.; White Wyand
and Exchequer Chicks, 10s. dozen; bro
and 12, 16s.; carriage paid—Peacock, A
tree Well, Ecclefechan.

Magnificent Pens of Pedigree W
Wyandottes; winter layers of large e
sittings by return, 5s. 6d.; unfertiles
placed.—A. T. Howell, Silverhow, Mill L
Teignmouth.

BARNEVELDER LARGE EGGS,
Reduced. Middleman's strain; 5s. do
Chicks, with broody, 18s. Exchequers s
price.—Wilson, Rigghead, Threlkeld,
rith.

SITTINGS AT REDUCED PRICE
Snowden Leghorns; Phillips Susse
Full particulars and illustrated catalo
free.—Barrowmore, 4, Gt. Barrow, Ches

SITTINGS AT REDUCED PRICE
Having completed our own requireme
we now have excellent Quality Egg
offer. White Leghorns and Black Legh
only.
4/6 PER 15.
No replacements. Carriage paid.—Le
Brow Poultry Farm, Dedham, Essex.

BARONESS DE BRIENEN'S
Barnevelders, lovely big brown eggs;
sittings, from reliable stock.—J. Broadb
212, Sticker Lane, Bradford, Yorkshire.

ALEX. J. BELL, M.S.P.B.A., U.D.
Longwick P.F., Princes Risborough, Bu
R.I. Reds, White Leghorns. Eggs, Chi
Stock Birds. List free. Satisfaction i
ted on. (See under Ducks and Drakes a

NATIONAL TEST.
Roland Garrett holds second place
four winter months. Only 17 second-gr
eggs. Black Leghorn: Sittings, 7s. 6d.
12s. 6d. Repeat orders received year a
year.—Lea Poultry Farm, Wheathampst
Hertfordshire.

FINAL REDUCTION.
Pedigree Trap-nested Buff Orpington, W
Wyandotte, White Leghorn, Fawn-W
Runner Ducks.
EGGS 5/- DOZEN.
—Colonel Sandbach, Caerllo, Abergele,
Wales.

EGGS FOR HATCHING,
White Leghorn and White Wyando
Barron and Snowden's strain; unlim
range; 5s. 6d. for 15, carriage paid;
with order. These birds are all bred f
the best stock obtainable. Satisfac
guaranteed. Inspection invited any
except Sundays. — Harry Fawcett,
Hall, Ireby, Kirkby Lonsdale, Westm
land

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, MAY 20th, 1925.

Editorial.

INFERTILITY.

A correspondent writes to ask what control breeder has over fertility. He suggests that very limited; possibly this is due to his own ortunate experience during the past breeding on, the management of the stock being the e as in previous years when he had no reason omplain.

o some extent it must be admitted that our rol is limited, but we can do a good deal to ure good fertility, and for that matter hatchity, if we are careful in the selection and agement of our stock. It should be clearly erstood that the degree of fertility is a matter nheritance.

he first point to consider is this question of ction, and it may be at once said, that a very percentage of infertility is due to the mating nmature stock. But, it will be asked, "What stitutes maturity?" We shall find this will considerably, not only in breeds, but in strains in individuals, so that it is difficult to define terms of months. Generally, however, we say that a Light breed male is mature (fit to) at ten months old, and the Heavy breeds at ve months. Either may be successfully mated onth earlier; so much depends on the in- lual and management during development.

here are important points to be considered in selection of the male. (1) Advice is frequently n to select those birds which are the first to ure sexually. This is not always sound, and ld not be taken too literally; often these young which exhibit signs of early sexual develop- t fail to develop bodily, and are poor breeders; a matter of observation. (2) Never mate a with shrivelled lobes, however excellent he be in other respects—in 90 per cent. of cases will give a high percentage of infertile eggs. Fertility will be much higher, and the birds nselves more vigorous, if the spurs of old males removed. (4) It is wise to dub males of the y-combed breeds in exposed situations. In North it is essential, in the South it is not ys so; but in severe winters, even in the h, a good deal of infertility is caused by frost- n combs. There are sentimental people who look up dubbing as a cruel operation. That is not so; there is far more cruelty when the bird's comb is frost-bitten. All that is necessary is to get someone to hold the bird by grasping the legs in one hand and the wings in the other, then with a sharp knife remove the comb by cutting from the base forward to the beak, as close to the head as possible; bleeding may be stopped by the application of cold water. The wound should be dusted with some antiseptic powder, and the bird kept isolated until it is entirely healed.

In selecting the females, equal care must be used. The question of maturity first arises; an ideal breeding pen is said to be two-year-old hens with a well-matured cockerel, but we are inclined to think that a well-matured pullet **in her prime** is a better breeder than the hen; but that she should be in her prime is a matter of importance, and that is not to be calculated in months. Highly-fecund hens, which continue laying into November, are rarely laying when their eggs are wanted for incubation, and even when they are they are not always in good breeding condition. It is far wiser to throw such birds into a moult in September. It will be found that fertility will be better, and the eggs will be laid when wanted. It is hardly necessary to say that the hens should be selected for health and vigour. Here, again, it will be found that a shrunken lobe will mean a high percentage of infertile eggs, and the same remark applies to a dull eye.

On the question of over-production, one can only say that this is largely a matter of observation. As we have said before, a hen has not necessarily over-produced because she has laid 300 eggs in her pullet year. If she was a precocious pullet, and started laying at five months old, and failed to develop bodily afterwards, we should say that such a bird had suffered from over-production, whether she had laid 200 eggs or 300. If she finished her laying career as a pullet, weighing less than when she started, again we should say it was a case of over-production; but a well-developed pullet which has laid 300 eggs, and finishes weighing more than when she started has not over-produced. We should always remember that selection for a specific factor is often opposed to others of equal importance, and selection for high fecundity is bound to increase infertility—not that the highly-fecund hen is necessarily infertile, that would be absurd thing to say, but when she is mated because she is highly fecund, and regardless as to the degree of fertility, then we may be perfectly certain that she will, if showing poor fertility, transmit that undesirable trait to her progeny.

The same remark applies to in-breeding or line-breeding. The mere mating of closely-related stock would not cause infertility, but it would intensify it. There is no doubt that in-bred or line-bred stock is often less fertile than other stock which is not closely bred ; but where a high degree of fertility existed in the foundation stock, it would not be lessened because the stock is in-bred or line-bred, as long as proper selection was maintained.

Over-feeding will necessarily cause infertility, because it results in fatty degeneration of the essential sexual organs. The danger here begins just as the birds are through the moult and before they recommence laying, but infertility is often due to underfeeding, which results in small eggs, and it is very prevalent with birds which have been forced during the winter months.

The question of the number of hens to be mated to secure good fertility is often asked. Speaking broadly one may say, 12 to 15 with the Light breeds and 8 to 12 with the Heavies. Much, however, will depend upon circumstances. We have known excellent results with one R.I. Red cockerel mated to 25 hens, where, under exactly the same conditions, a Wyandotte has given only moderate results with half the number ; small matings are not conducive to greater fertility. A male on free range may be given a greater number of hens than one in confinement. It is not advisable to mate more than eight hens to an old male. There are of course individual exceptions to this.

Males, which it is intended to keep for a second season, will not be found less fertile, if allowed to remain with the hens after the breeding season is over. It is advisable, however, to remove them during the moult. If such males are kept from the hens for a very long period, they will often become sterile. Close observation should be kept upon the male, as often a very gallant bird will not feed until the hens are satisfied and so gets out of condition ; such birds should be taken out of the pen and fed separately. In conclusion, all breeding stock should be kept from extremes of weather, exposure to cold winds, frost bite, etc. Coddling is not recommended, but draughty, badly-constructed houses are not conducive to good fertility. In answer to questions as to the time a pen should be mated before fertile eggs can be obtained, the shortest recorded time with an individual mating is 42 hours, the longest period which has elapsed after the removal of the male in which an egg has been found fertile is 20 days. Six days after the introduction of the male, maximum fertility (100 per cent.) may be reached.

Dear Sir,—I have only been a member of the S.P.B.A. since January, but I have gained more knowledge from "Eggs" and the Year Book in that time than I have ever got from other journals in years.

Yours faithfully,
(Signed) H. BRAMLEY.

Poultry Foods,

THEIR NATURE, COMPOSITION, EXAMINATION,
AND ADULTERATION.

By HAROLD T. CRANFIELD.

Advisory Chemist to the Midland Agricultural and Dairy College. Late Official Agricultural Analyst to the Counties of Notts. and Lindsey (Lincs.). Member of the Society of Public Analysts.

(Continued).

POULTRY NUTRITION.

The economic feeding of poultry, in common with farm stock, demands a knowledge of the principles nutrition. This subject is one which has develop more recently than the study of plant nutrition, a in consequence, there is still much to learn regardi the best methods of feeding, and the effect of vari foodstuffs on the animal. Poultry nutrition proble have received less attention at the hands of the search chemist and physiologist than problems invo ing other farm stock, and only recently—during t last few years—has government assistance been for coming in this country to develop this branch of ag cultural science. Up to the present the greater p of research into poultry nutrition has been carried in America.

It is not proposed in this article to delve deeply in the science of feeding, but in view of the more a more scientific methods adopted by writers in the p sent-day press, it behoves every poultry farmer become familiar with the broad principles of nutriti

CONSTITUENTS OF FOODS AND THEIR USE

All foodstuffs, with few exceptions, contain the f lowing substances :—

(*a*) WATER.—Although necessary in digestion, monetary value is usually placed on this constituent

(*b*) PROTEINS. Also called Albuminoids.—The compounds contain nitrogen, and are absolutely esse tial for the growth and maintenance of the bird. Pr teins build up and repair the fleshy (muscular) tiss of the body, together with the brain and intern organs. They are also responsible for the production blood, and contribute largely to the growth of sk and feathers. Proteins, moreover, are necessary f the proper digestion of the other food constituent and must be present in certain minimum proportio in the ration. In the case of laying birds protein utilised in the production of the white of the e (albumin), and to a certain extent the yolk. Sin protein is a very expensive constituent of foods, exce should be avoided. Any excess over the above requir ments is turned into body fat or produces heat a energy, two functions which can well be performed the cheaper carbohydrates.

(*c*) CARBOHYDRATES (including nitrogen free extra and fibre).—The carbohydrates in foodstuffs ar broadly speaking, of two types: (1) Starches a sugars, &c.; and (2) Fibre or cellular tissue. Starche sugars and similar compounds supply the body wi t, energy for work and fat. The yolk of the egg is ;ely composed of fatty material, which is built up ıcipally from the carbohydrates. The fibre of foods to a certain extent, digestible, depending on the ıre of the material and the digestive apparatus of animal. Some of it is fermented in the intestines, produces gases. The important value of fibre, ever, lies in its physical action in the stomach in ting the concentrated portions of the ration, and preventing digestive troubles. Excessive fibre, ever, is not desirable, since too great a strain is ed on the digestive apparatus.

) Fats and Oils.—These constituents of foods l similar functions to those of carbohydrates, i.e., lucing heat, energy for work and fat. They are, ever, two to two-and-a-half times as valuable, ;ht for weight, as the carbohydrates. Although fat to a considerable extent, be replaced by carbohyes, a little is necessary in a ration for the purpose ndering the food more palatable, and also in keephe action of the bowels normal.

) Mineral Matter, also called ash.—The inorganic tituents in foods, i.e., the portion which will not away on heating, are of great importance in the th of birds and the production of eggs. The bones ıe body and the various salts present in the body s—digestive and otherwise—are dependent on an uate supply of mineral matter, and a deficiency of material is soon apparent in the feeble growth of The shell of eggs is largely composed of mineral ıituents, and egg production demands an adequate ly of mineral matter. Many compounds are prein the inorganic portion of foodstuffs, the most rtant being lime and phosphoric acid Little is n at present concerning the various functions of constituents, but in a varied ration there is little hood of a deficiency.

INTERPRETATION OF ANALYSIS.

general analysis of a feeding stuff states the total ntage of the various constituents, but does not ıte the relative amounts digestible. Digestibility ood depends on many factors, but numerous exents have enabled chemists to state the approxipercentages of digestible constituents in all of the nown foodstuffs. In compounding rations, estible " figures should be used. Published * always state the average total and digestible ıtages of the food constituents, and it is, therean easy matter to calculate approximately the ible constituents in any sample, the ordinary analysis of which has been made.

---

mposition and Nutritive Value of Feeding Stuffs," by nd Halnan. Published by the Cambridge University Press.

ıposition, Nutritive and Manurial Values of Farm Foods." ı No. 73, Dept. of Agriculture, Leeds University.

Ash View, Heaton Grove, Bradford.

Sir,—I might say that I have found "Eggs" to be the lpful paper I have ever seen, and only wish I had taken r, as I should have started on quite different lines if I e so.

Yours faithfully,

(Signed) G. H. GRIFFITHS.

Angora Rabbit Wool Farming. IV.

By THE LADY RACHEL BYNG.

Though from the attendant's point of view, indoor hutches are the more desirable, Angoras are so healthy, they thrive equally well out of doors.

Breeding can be carried on successfully all the year round in outdoor hutches even in Northumberland. No risks must be taken, however; the hutches must be absolutely damp and draught-proof.

Though Angoras do not mind intense cold, draughty hutches give them cold, and dampness is not only detrimental to their health, but also to their wool. An ideal spot for outdoor hutches is on the border of a plantation or wood, where the trees and bushes form a natural protection from too great sun, storms of wind, or rain, and driving snow. If possible, a southern aspect should be selected.

For outdoor houses it is imperative that each hutch should have a portion of the hutch completely shut in to form a bedroom and refuge from inclement weather.

Angoras should have hutches at least 20, preferably 24, inches high, for they love to stand on their hind legs. No adult should be housed in a hutch less than 2 ft. 6 in. x 2 ft. x 2 ft. Where space permits 5 ft. length is preferable to 2 ft. 6 in. Stud Bucks, and Does with families, should have hutches at least 5 ft. in length.

Exercise plays a large part in the maintenance of health and stamina.

Hutches should be raised six to nine inches from the ground.

With Angoras it is possible to have a tier of hutches with one door 6 ft. high for their run compartments.

They are so gentle and quiet, they will not jump out, though they invariably peer out to see what is happening. It is wise to feed the top hutch first.

No elaborate hutch is needed. Excellent ones can be manufactured from tobacconist, Bryant and May's packing cases, or from bacon boxes. These last, however, are seldom square, so they are awkward for stacking. Tea boxes are often suggested as being suitable. They have two great drawbacks. The three-ply wood with which they are made is very difficult to negotiate, and the floor, after a few months, wrinkles into large ridges, with damp from the rabbits' urine. These ridges are apt to give sore hocks. For indoor hutches an unused store or brick stable is ideal, for it is cool in summer and warm in winter. The stone floors are easily kept clean, and sweet, with a deck broom, and Lysol and water.

The floors of the hutches themselves should have a sprinkling of sawdust all over, with a big handful in the corner used by the rabbit. Above this should be spread a thick layer of oat or wheat straw, cut into lengths of 1 ft. Straw longer or shorter than 1 ft. is apt to become entangled in the long wool of the Angora. As a rule, if the straw has been laid on really thick, the hutches will not require more than a weekly clearing.

OUTSIDE HUTCHES ON LADY RACHEL BYNG'S ANGORA RABBIT FARM IN NORTHUMBERLAND.

Where a mother and babies are housed, it is important that their dirty corner should be cleaned out daily, and all damp straw and sawdust removed, for it is by carelessness in these details with young stock that the dread coccidiosis is bred. Coccidiosis needs dampness to live—hence it behoves all rabbit breeders to remove all dampness from their hutches in which babies are running about. All hutches should have at least two food vessels—one **for fresh water,** the other for corn or milk. A hay rack is another essential which should be kept filled with clover hay.

Indoor hutches do not need extra protection at night, but outdoor hutches must be provided w movable shutters at night, leaving only one i unprotected on the top of the whole length of w front for ventilation. Sacks can be used, but th soon rot in inclement weather.

Adult Angoras must be housed in separ hutches. In fact, the sexes must be separated three months old, and for the sake of the woo is wiser to house each individual separately four months of age.

Bucks can be castrated between three and f months of age, and these can be kept toget in flocks.

It is wise to have a few hutches isolated to fo an emergency hospital, in case an infectious illn should occur.

Angoras are very healthy, and if ordin observations and attention to details are giv nothing more than occasional colds or indigest should require doctoring.

The Lady Rachel Byng will be pleased to ans queries if stamped addressed envelope is enclos

Leg Weakness.

By **M. S. TAYLOR.**

For long enough, leg-weakness has been regarded by any people as a disease. This view has, by recent ientific research, been proved entirely erroneous, and e now definitely know that leg-weakness is, of itself, t a disease, but a symptom of the many diseases hich our inane scramble for high production is en- uraging among our flocks, which are becoming less id less able to ward off the attacking forces of disease rms.

In the case of adult stock leg-weakness is sympto- atic of such diseases as rheumatism, tuberculosis, id severe liver trouble, while it may also be directly tributable to the presence of internal parasites, such tape-worm and round worm. When these latter are e case, and it is surprising how often post-mortem camination has proved them to be, one can generally ll from the rapid way in which the victim loses flesh id weight, coupled, of course, with its inability to use s legs. Infestation by round worm is comparatively sy to cure, if the materials to effect the cure are at l procurable. To every hundred pounds of mash mix couple of pounds of tobacco dust, and feed this to e infected birds for a couple of weeks. This treat- ent may have to be repeated after a period equal in me to the period of treatment. This cure is of an merican origin, where tobacco is decidedly cheaper an here, but the writer made it his business to ascer- in if tobacco dust was procurable at a reasonable gure in this country. The replies received are satis- ctory, and are such to make him believe that from y big tobacco manufacturing establishment this dust, hich, as far as the manufacturers are concerned, is e more or less waste, can be procured at only a minal figure. This information is gratifying, as cent research has proved that infestation by round orm is indeed exceedingly common in fowls in this untry.

The cure of tape worm, however, is not effected ite so easily, but at the same time it is quite possible rid fowls, even in advanced stages, of infestation. o four quarts of grain, preferably wheat, add one tea- oonful of lye. Cover with water and mix thoroughly. ook the mixture at a low temperature for two-and-a- alf to three hours. Starve the infected birds for venty-four hours, after which period allow them to eat much as they like of the grain and lye mixture, ving only drinking water in addition. This should st for two days, when the birds may be put on their dinary rations. Should any doubt exist in the mind the poultryman as to the completeness of the cure, y at the end of ten days' time, he should repeat the eatment, and in this way he is certain of effecting a ire.

To turn now to that common type of leg-weakness used by dietetic deficiencies setting up internal dis- ders which re-act on the proper functioning of the gs, it is found that this is more prevalent during the hot summer months; in fact, from mid-June till about the end of August. This trouble very often takes the form of polyneuritis, and is greatly accentuated by the absence of the natural green food which is withered by the sun. This food, under normal conditions, contains a sufficiency of the Vitamine B. for the hen's requirements, and so the trouble is averted.

It is with some diffidence that the subject of Vitamines is broached. Like most other "nine-day wonders," it seems somehow to have lost a great deal of its gloss, and to be rapidly sinking into obscurity. There is little doubt in the minds of most people that far too much was expected from the Vitamine craze, and in consequence of its more or less subsequent failure to come up to expectations, the very mention of the name is repugnant to a lot of people. Be this as it may, there is a great deal of be said on the question, and it would be folly to abandon research in the matter because the hopes of the majority have soared higher than their knowledge.

Take for instance, the case of leg-weakness in chicks under six weeks old, which eminent authorities are inclined to believe is a form of rickets. If there is less than the normal amount of calcium or phosphorus, or of both, present in the blood of a growing chick, the result is likely to be that lime salts cease to deposit in the bones and cartilage, and the bird is consequently said to be a victim of rickets. Now this form of leg-weakness is most particularly noticed in the earlier part of the year, when the inclemency of the weather dictates that rearing must, for the most part, be done indoors, and on an ordinary ration. *This particular form of leg-weakness can be cured by the use of Cod Liver Oil*, but, and this is the point to be remembered, and which has caused so much misunderstanding, this is only one form of leg-weakness in chicks. There are many other—others, moreover, which remain absolutely impassive to the administration of Cod Liver Oil; for example, coccidiosis in chicks. This complaint, in quite numerous cases, causes leg-weakness, which no amount of Cod Liver Oil would cure. Yet because it has been loosely stated that Cod Liver Oil cures leg-weakness, people have given it to birds so affected, with negligible results, and blamed the Cod Liver Oil, not their own erroneous diagnosis of the complaint from which the birds suffered.

Now this cure of rickets by Cod Liver Oil is of a valuable nature, and it is directly attributable to a Vitamine, although not to the Fat Soluble A., as was recently thought, but to another closely allied to the A. Vitamine. In fact, there exist many poultrymen who think the Vitamine worthy of much honour for this alone. Then, again, take the value of milk as a chick food. This value has been proved, without a doubt, to be the work of the vitamines contained therein, as synthetic milk has, as a chick food proved valueless. Another food which protects against rickets is a beaten egg. One egg daily for thirty chicks is the correct amount, while for the Cod Liver Oil half a pint daily to 500 chicks is the proper dosage.

Polyneuritis is, as has been mentioned before, due to the lack of a vitamine, namely, the water Soluble

(Continued at Foot of Column Next Page).

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

F. T. (Oldham) writes and asks what we would advise for a dry mash for layers. They have one handful of wheat between every three birds—is this ample? What we would recommend for month-old chicks, and at what age we should give the adult mash? Could we recommend a good dry chick feed? Is wheat alone a good grain feed for rearing chicks over a month old? Is mustard a suitable green food for chicks?—The best dry mash for layers would be: 2 lbs. bran, 4 middlings, 2 maize meal, half meat and bone meal, and half soya bean meal. This is the cheapest mash which could be used now. For one-month-old chicks the following mash would be advisable: 4 lbs. bran, 4 middlings, 1½ S.G.O., half maize meal, and half meat and bone meal or fish meal. When the chicks are eight weeks' old the bran should be reduced to 3 lbs., and they should be kept upon this mash until they are five months old, when the ordinary laying mash should be given. The following would be a good dry chick feed: 15 parts finely cracked wheat, 15 finely cracked maize, 10 split groats, and 3 canary seed. In answer to his fourth question, the chicks can be reared on wheat alone as the grain, but this is not advisable, as a combination of grains is always better than a single grain. I should use good plump oats two parts, wheat two parts, and kibbled maize one part. Mustard is quite suitable as green food for chicks.

T. J. H. (Harlesden) asks if I will let him know through these columns the cause of the following:—He has 24 Buff Rock chickens, three months old, well grown and healthy. They are kept in confinement in a well-built, dry, clean scratc shed, of good dimensions. Last week they veloped vicious tendencies, and plucked at wing joints and the tail of three birds amon them. As soon as blood flows from the wo they all rush eagerly to drink it, whilst the p sufferer is helpless. They do not eat the feath They are fed on dry mash, good corn, and h clean water twice a day, and some green food, "T.J.H." adds that he has for several years k chickens under the same conditions without s a think occurring previously.—This is a vici habit, and may develop into cannibalism unl something is done immediately. I would sugg that they should be given sulphate of iron in drinking water at the following rate: Disso two ounces of powdered sulphate of iron in a qu of water and add one teaspoonful to every pint drinking water, at once, and the animal food the mash doubled; that a little salt be added, a that they be kept as active as possible; and al if possible, allowed free range for the time bei Such a habit as this is very difficult to eradica and failing anything else it would be best anoint the birds with some nauseous substan such as lard, to which a little bitter aloes has be added.

S. M. (Sale) sends two samples, both sold as soya bean meal, and she wishes to know whi is the genuine article. No. 2, the light bro granulated, is the genuine article, "S.M." T other is soya bean cake meal, which is differe in composition to the soya bean meal. No. 2 the genuine extracted soya bean meal.

B. L. P. (Bicester) has White Leghorn chicks eleven weeks old, and he is not satisfied with the growth. He is giving them whole wheat, as mu as they want, with the addition of a wet ma made up of: Maize meal 5 parts, S.G.O. 10, me meal one, and toppings 15. "B.L.P." is ove doing the wheat, and the mash is deficient in i protein content and also in mineral salts. It w be better to put the chicks on the following mash 3 lbs. bran, 4 middlings, 1½ Sussex ground oat half maize meal, and half meat and bone meal fish meal. This should be always before them and is a dry mash. In addition they should hav a small wet mash consisting of: 1 lb. S.G.O., middlings, one bran, and half meat and bone mea

LEG WEAKNESS—Continued.

B. The writer has personally cured many cases of th form of leg-weakness by the use of five per cent, drie yeast in the mash, and is convinced that this article food should replace half the fish meal in the mashes all backyarders and others, whose poultry are subjected to confinement, but in all cases of leg-weaknes the trouble which causes the bird to lose the power its legs should first be considered, as this is the onl way in which to effect a cure.

am advising the wet mash here because they ive been reared on wet mash, and a sudden ange to dry mash entirely might check them. addition they should be given a good grain feed wheat and good plump oats, in equal parts, as e last feed at night. At present these chicks ant to be induced to eat more protein food.

H. V. T. (Tower Bridge). If "H.V.T." will mmunicate with me I will put him into touch th someone who would undertake the caponizing r him.

W. L. (Embleton) sends me two samples of eat and bone meal—one with an albuminoid tion of 60 per cent, and oil content of 12.20 per nt., and the other an albuminoid ratio of 38.50 r cent., and oil content of 10.60 per cent. The st is 18s. cwt., and the second 14s. The dearer mple is undoubtedly the better one, but the estion is whether it is worth, to my corres- ndent, the additional money, and I am bound to y that I do not think it is. Such experiments have been made with meat meals containing a gh percentage of albuminoids, as against those ntaining a comparatively lower per cent., have t shown, as far as egg production is concerned, y great advantage over the higher percentage. der the circumstances I should advise my rrespondent to buy the cheaper meal.

"Novice" (Blackburn) has thirteen 1924 Leg- rns. He feeds wet mash in the morning and ain at night. His mash is: 1 lb. bran, 1 alfalfa al, 10 middlings, 5 maize meal, 1 soya bean al, and 1 meat meal. Grain: Equal parts eat, oats and maize. He was feeding two parts ize, but one or two of his eggs have had blood ots in them, so he has dropped one part out. intends killing off when they moult, so he wants the eggs he can get out of them. Could I tell n how he should alter his mash for the summer nths? He asks if it is necessary to use any er grit besides lime-stone? One or two of his ds have been troubled with their crops, and have d sour crop. He thought they might need some it grit. Is it worth while trying to cure birds h canker? He killed two a few weeks ago, and y had no swelling or running at the eyes, but ir mouths were full of growths. Can the ease remain in the ground? He could get en cut bone fresh daily delivered, at 5 lbs. for ., and he asks if there is any need to use it.— reply to "Novice's" question in reference to orcing mash: The best thing he could do would to add another 2 lbs. of maize to his present mula and another pound of meat meal. I do much believe in forcing hens at this time of year; generally they will lay all they are going without forcing. No other grit is necessary sides lime-stone. The absence of grit would cause sour crop. This is due to an entirely erent cause, generally through some ingredient in the food which is indigestible. The best plan is to hold the bird upside down, gently knead the crop and press the contents out through the beak, then give the bird carbonate of soda at the rate of one teaspoonful to eight times the quantity of water, twice daily and feed sparingly. It is hardly worth while treating birds with canker if they have it badly; and I am always, when the disease first breaks out, in favour of killing the bird and burning it. The most drastic methods at that time are the most effective. Yes, the disease can remain in the ground, and it should be thoroughly limed, dug up and cropped. Green cut bone is unnecessary, but if it can be obtained at 5 lb. for 6d., it is so cheap that it would be economical to replace the meat meal in the mash with it. It would be at least as good an egg producer.

R. N. C. (Hurn) says:—"You state that it is necessary to feed more heavily during the spring and summer," he feeds maize all the year round, but has often seen it stated by me that the laying mash should be broadened during the spring and summer months. Also, he wants to know whether I would advise him concerning a new laying house which he is putting up. He is situated in a very wind-swept part of the country, and has been in the habit of roofing them with ¾ floor boards, not tongued and grooved, covering them with 2-ply "Ruberoid," and this will not stand the said gales. He asks whether I have had any experience with just corrugated iron roofs without any boards underneath. He would be glad if we would raise the subject in "Eggs," so obtaining other people's experience.—In answer to his first question, if he is feeding maize all the year round, I do not think it would be wise to change the mash at all. One cannot lay down hard and fast rules for this. It is advisable to watch the birds' bodily condition. Some indication as to whether they require more maize, or the ration should be broadened, may be obtained by the size of the eggs themselves. Very frequently these drop off in size at the end of May, as well as in numbers; that is because the bird has drawn too heavily on her bodily reserves. An increased amount of maize will then result in a larger egg and more of them, and will delay the moult. In reply to his second question, re corrugated iron roofs, I have had some experience of these and certainly have not found them more resistant to gales in exposed positions. In fact I have seen them sailing across the farm like kites, in a high wind. The other disadvantages are that they make the house too hot in summer and too cold in winter, and are inclined to sweat, so that the litter is difficult to keep dry. This difficulty, I think, could be overcome in a properly ventilated house. I think experiments with corrugated iron would be well worth undertaking, but if any of our readers would care to send their experience we should be glad to receive them.

Utility Duck Club Notes.

By **HUGH B. CARRINGTON.**

The last month has brought me a stream of correspondence which shows that the functions of the U.D.C. are not yet fully understood by some who are not members. It will, therefore, perhaps be worth while to state briefly the aims and objects of the club and the policy which the Council is following.

First of all, the minimum subscription is 5s., though, of course, the bigger duck-keeper in very many cases gives far more than this.

To what does this 5s. entitle members?

1. A Year Book, which is published early in each year, the price of which to the public is 2/6.

2. Free leaflets written by experts and distributed from time to time to all members.

3. Free advice on all Duck matters by post on receipt of stamped addressed envelope. Such enquiries to be sent direct to me.

4. The advantage of belonging to an organisation which watches the interests of duck owners in many different fields. The present effort which is being made to popularise the duck egg might be given as an example, though members are asked for additional cash help in running this campaign.

What has been done in the last two years?

The membership has been increased to three and a half times the figure at which it then stood, fairly good evidence that duck-keeping is making big strides.

Apart from Year Books 15 leaflets have been published free to members.

Much spade work has been done by the Council, which, though it cannot be defined, has helped in forwarding the interests of all members.

Here it may be as well to mention that the club literature is NOT free to anyone who likes to ask for it, but only to members. It may, however, be purchased as follows :—

Twelve bound leaflets issued prior to the current period at 1/6, post free, to non-members, 1924 Year Book 2/-. Other leaflets and Year Books at published prices as issued.

Many a member, I am confident in saying, has been saved the price of his sub. in the first few days after he joined, nor have I ever received a complaint from anyone that full value has not been given for the membership fee.

The next points I wish to mention are, I must admit quite frankly, with the object of saving myself trouble. Many enquiries have come to hand with regard to the necessity of swimming water for ducks.

Swimming water is entirely unnecessary for the laying breeds of duck, both when merely egg producing and when breeding. I have a flock of so 400 ducks, most of them would hardly know w to do with a pond if they met one, and some these birds are five years old and have b breeding ever since they were able to do so.

Another point, skim milk is excellent for rear ducklings.

Another, there is no need to scald mash.

Yet another, baby ducklings must have wat and they must have shade; they must not cooked in the brooder. Temperatures from degs. to 90 degs. in the brooder are unnecess and harmful, the limit is 80 degs. directly th come from the incubator.

If these points were observed more careful the number of cases of so-called cerebro-spi meningitis would drop amazingly.

Three final points: Ducklings must not allowed to get into water vessels out which th will have difficulty in extracting themselve reduce a duckling to a sodden little lump of shiv ing bone and matted fluff, and it will quicl succumb.

They must not be fed with sloppy mash, if th are it will stick all over the bodies of themselv their neighbours and the surrounding scenery they shake their little heads and bills; and, wo still, it will gum up their nostrils and eyes so th they can neither breathe nor see.

On no account when they are babies give the husky meal of an indigestible kind. Good bisc meal, finely ground S.G.O., and fine midds. equal parts by weight with a little broad bra sufficient to make the mash crumbly, is excelle

These, however, are only a few notes on duc ling rearing. If anyone wants fuller informati they should purchase the literature on the subje

A correspondent sends me an account of a su cessful method he has employed to preserve du eggs. Similar results have been obtained by oth members who have used different kinds of greas the principle being to seal the pores of the sh and so prevent evaporation and putrefaction the contents within the shell.

He writes as follows :—“ It occurred to me th as vaseline is a well-known preservative from rus owing to the fact that it excludes both air a moisture, it might also be used for preservi duck eggs. Accordingly last year I covered a fe eggs with vaseline, rubbing it on with the han and wrapped them round with paper. After elev months they were found to be in a first-class co dition.

“ For a large number of eggs vaseline should melted in a bowl till it is quite liquid, then means of a perforated spoon they are dipped the vaseline and immediately transferred to a cro or pail. This process seals every pore in th shells. When full the crock or pails should covered with paper to keep out dust. When th eggs are required for use a cloth and hot wat will remove the grease.”

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

AN EXPLANATION?

Recently a member sent me a couple of dozen eggs know why they had not hatched. On examining em I found they were all infertile, and wrote him that effect. The report was sent on to the breeders, io supplied the eggs, and here is their reply:—

> "Our explanation of the number of unhatched eggs is that while we know the eggs were fertile when they left our farm, it is imperative that the male germ should be covering that of the female at the time the eggs are set, otherwise germination cannot take place when the eggs are brought to blood heat, and when there is any unduly rough handling in course of transit, the eggs on the outside of the package are injured."

My correspondent writes to ask whether I have ever ard of this theory before, and I must confess I have t. How the firm *knew* the eggs were fertile when ey left their farm, we are not told, but I think it will agreed that the explanation is more ingenious than tisfactory. I should add that they wrote a very cent letter, according to the purchaser, and offered sitting free, which was not accepted.

GETTING IT.

One gets it hard and thick sometimes, and I have d three letters from three readers this week which ll illustrate what I mean. One begins:—"You say at in-breeding causes degeneration. I have mated other to sister, and have some of the most promising icks *you* could wish to see." There you are, you e, I am bowled middle stump apparently, but then y correspondent has had very little experience, and has not read me correctly. I too have seen very omising chicks from such a mating, and when you ve two really exceptional individuals, there is, as I ve so often said, very little fear of degeneration, but u haven't always two exceptional individuals. We ıst not make the mistake of thinking high records ike "exceptional" individuals. That idea is responsible for a good many of the evils from which ultrydom is suffering at the present day, and one ccessful mating, such as my correspondent's, leads ny people astray. What one would like to know is reason for mating brother and sister. Now the xt one writes:—"I do not agree with you when you y that a high percentage of animal food causes prosus. I have fed up to 25 per cent. in the mash, and ve never had a single case." Everything comes to ose who wait, and my correspondent will have a case prolapsus one of these days if he continues to feed ch a wasteful amount of fish meal. What I said s that with heavy producers a high percentage of animal food during the flush season would cause prolapsus, and this is undoubtedly the case. The majority of cases occur during the flush season, and with heavy producers, who do not require anything in the nature of a forcing diet, and 25 per cent. fish meal is very forcing. The third letter is from a reader who has bred from pullets this season. He says:—"Your advice is 'never breed from pullets.' I have bred from pullets this season, and have had wonderful results; the mortality has been less than 10 per cent. I don't know what explanation you can give in view of this." Here, again, my correspondent is mistaken. I wrote: "Never breed from pullets which are from pullets bred." But in any case I would not breed from pullets if I could avoid it, with the exception of the early-hatched pullet in her prime, which is perhaps the best breeder we have.

EARLY *v.* LATE HATCHING.

This is an old subject, but I have been asked by a reader whether I can give him any reliable information as to the difference in number of eggs by February, March and April hatched Leghorn pullets. I am afraid I have not much information on the subject—that is to say I have no statistics—but I have some grounds for believing that a January-hatched Leghorn is the most profitable of all. If I can complete my figures I hope to be in a position to publish the evidence. To return to the point. Some years ago Mr. H. B. Escott sent me some figures, dealing with three pens of White Leghorns, 60 to the pen, hatched respectively in February, March and April. Numbers of eggs were not given, and, of course, values differ from those at present, but they will perhaps help my correspondent and interest others.

	Feb. hatched.	Mar.-hatched.	Apl. hatched.
August	1.10	—	—
September	7.0	2.3	—
October	6.5	7.10	0.7
November	3.9	2.4	3.8
December	2.8	3.1	6.8
January	4.0	5.5	6.11
	25.8	20.11	18.0

These figures are by no means conclusive. My deductions from the figures which I have been able to collect from other sources, are that the January-hatched Leghorn is the most profitable, followed by the April, February a good third, and the March bird comes fourth, but the figures want carefully analysing, and I would much prefer a proper test to be undertaken. Perhaps some day the S.P.B.A. will do it.

PERSONAL INTERVIEWS.

I have a proposal from one of our members that I should arrange to spend one day in London, either weekly or fortnightly giving interviews by appointment to all members who would like to meet me there, and be advised on what he describes "as many matters which often seem trivial but are really important." He suggests that I should allot, say, half an hour to each member.

I wonder whether it would be worth while?

My time is pretty fully occupied now, but I should like to get members' opinions on the matter.

FOOD PURCHASE SCHEME.

Our members in Scotland will be pleased to hear that we have now made arrangements with several firms to supply foods under the conditions of the scheme, and we are hoping to arrange with others so that the cost of freightage shall be cut down to the minimum, and each district may be served at the lowest possible cost.

There has been a great demand for the S.P.B.A. mashes. So far only one complaint has been received, and this we are investigating.

May I plead with members for a little patience, and ask them to remember that we are only feeling our way, and hope, with experience, to effect improvements until one day we shall be near that perfection which no one ever attains. Meantime, I can only say that the scheme has met with a very splendid reception from our members, and may I once again remind them that its success or failure depends as much upon them as it does upon the Central Office.

Lists of Prices will be sent by return of post upon application.

S.P.B.A. EXPERIMENTS AT WELLINGHAM.

In the report of the Wellingham experiments made last week I am made to remark "the fact that they were able to do without artificial light at five weeks old is interesting." This would give a totally wrong impression of the experiments. It was artificial **heat**—not light.

No artificial light was used at any time during these experiments. It would, of course, have given a very false idea of the results had it been used.

WHY DOES A HEN CLUCK AFTER LAYING AN EGG?

I take the following from "Pearson's Weekly":—

> "The principal reason of the clucking dates back to far-off days when the hen's ancestors were anything but domesticated birds. In small droves the flock would wander about the jungle, a hen falling out as it were to lay her egg. This task accomplished, she would find herself separated from her company, and would cry out to let them know her whereabouts. On hearing her clucking, the cock, as the natural leader of the flock, would respond, so giving the hen a chance to rejoin. To-day the necessity of the cluck has vanished, but the domesticated hen and cock still call and reply. The hereditary instinct has come down to them through the centuries."

A visitor wants to know if the cockerel which awoke him at 3 a.m. this morning was replying to the hen which laid a second-grade egg, and made such a fuss about it at 9 a.m. yesterday.

WE HAVE RECEIVED THE FOLLOWING FROM MRS. ATHOL STUART.

"Dear Sir,—Will you kindly apologise in 'Eggs' for the many applications for the Hannaford Hovers, I advertised, which I have had to leave unanswered, as it was quite impossible for me to answer them all."

Yours faithfully, A. STUART.

Correspondence.

R.I.R. HEN, No. 37.

Dear Sir,—Perhaps I ought to try and reassu Mr. W. M. Golden as to the records, as I kn this hen nearly all her life, living within 1½ mil of Heath House, Cheddleton. If Mr. E. C. Bouch is wise he will not embark on a corresponden on the subject, personal polemics never do a good.

Those who read their Bible may remember t saying about the generation (with suitab epithets) which sought after a sign. Applyi the moral, what advantage would it be to produ the record cards? Anyone can fake a card, and we are to disbelieve breeders' statements whe will the industry, or, for that matter, the S.P.B. Register be? Far be it for me to decry offic tests, but none of them last for more than t years, few so long. With all the carriers coccidiosis and B.W.D. about the country, man including myself, would never think of competi in either test or exhibition.

Records over 290 are so common at Heath Hou that during her pullet year No. 37 was looked up as nothing beyond a good bird. It was, if remember rightly, about January, 1919, that first saw her and discussed with Mr. Boucher t advisability of breeding from high records. throws out many such if the eggs are small the bird miscoloured, or not otherwise tip-to By October, 1919, it was evident that the h was altogether out of the common, and breede began to come from all parts to have a look her, and the cards and the eggs. For the la few years she has been known by repute all o the English-speaking world, but I have never hea that Mr. Boucher claimed her record to be offici whereas no one has ever protested against t phrase "World's Record," although he or she h every chance to do so.

I cannot, of course, speak to the absol accuracy of the published records, but I may s that I know, for what my evidence is worth, th they are substantially correct. I have seen t whole thing, birds, cards and eggs hundreds times from month to month up to the time of t hen's death. People may believe it or not, as th choose.

Yours, etc.,

W. F. MENZIES, M.D.. B.Sc., F.R.C.P.

COST OF EGG PRODUCTION.

Dear Sir,—The following cost of productio compiled by Mr. Wyllie, the economist, of W Agricultural College, from my balance sheet, m be of interest to your readers :—

COST OF EGG PRODUCTION FOR YEAR ENDING 31st OCTOBER, 1924.

	£	s.	d.	£	s.	d.	£	s.	d.
oods in Stock 31/10/23	71	16	9½						
Purchased 1923-24	290	17	1½						
				362	13	11			
Less resales	5	3	4						
In stock 31/10/24	15	0	1						
Manurial residue	45	0	0						
				65	3	5			
quipment in stock 31/10/24	239	10	7				297	10	6
Purchased 1923-24	140	0	6						
				379	11	1			
Less in stock 31/10/24				332	2	3			
							47	8	10
tores—Cresote, oil, etc.							14	8	5
ent and Rates (Proportionate)							25	0	0
abour (Proportionate)							150	0	0
undries, including keep of Pony £20							23	6	4
				Total cost			£557	14	1
ess Credit Balance of Poultry Stock a/c thus in stock 31/10/24	158	7	0						
ales of Surplus stock cockerels, chicks, etc. ...	133	12	5						
nfertile eggs	1	8	3						
				293	7	8			
n stock 31/10/24	161	12	0						
urchased 1923-24	4	5	4						
				165	17	4			
							127	10	4
				Net cost of Eggs			£ 430	3	9

otal number of eggs sold, 6,693 dozen. Total Cost per dozen eggs, sold per dozen, 1/3½ almost.

Signed by JAMES WYLLIE (31/3/25).

he amount of food used during the year was cwt., at an average cost of 10/3½ per cwt., that we get 10 dozen eggs (about) for every of food consumed, not counting the 3,294 eggs set. Their value must be recovered in the stock sold.

Yours faithfully,
W. HALL.

HOUSING.

ear Mr. Newman,—With reference to Mr. A. wart Buckle's criticism of the paper I read re the Gloucestershire Branch of the S.P.B.A., I be allowed to make the following remarks :

he Apex house mentioned was 9 ft. high and . broad, which makes the base angles 60 rees. There would be no point in making a se 9 ft. high and only 7 ft. broad.

he usual way of putting on felt is to place it up down on the roof, whereas I put it on length- s. I agree that it makes a better job if the is put down with solution, although if copper s and battens are used the felt lasts quite , and there is very little chance of rain trating.

ne sliding doors work exceedingly well in tise, and one of the biggest farms in the North ngland have used this type of door for the last years with success, and as for myself, I shall r return to the hinged type for poultry house s.

Yours faithfully, MARTIN GRAY.

REGISTRATION OF EARLY HATCHED PULLETS.

Dear Sir,—I am of opinion that early hatched pullets should be allowed to be registered. I have found that the earlier a pullet is hatched the better she does.

I think 40 eggs or more in the first 90 days from the date of her first egg would be a good enough test, but I think there ought also to be some standard as to the size of eggs. Early hatched pullets very often commence to lay at far too young an age, and, although they may lay a large number of eggs, such eggs from these very early starters are generally small. On the other hand, one cannot expect pullets to start off with 40 2-oz. eggs. I think 40 eggs are quite enough, because the very early birds will probably go into a moult before they have a chance of laying many more.

Yours truly,
ARTHUR BREWIS.

COMMUNITY POULTRY FARMING.

Dear Sir,—I cannot resist the temptation to accept Mr. Hall's challenge, although I am dubbed a beginner, having till July 31st to complete my third year in poultry, about which I knew nothing before that date at the commencement.

It is not a year's estimate of profit, but it is taken over the period between December 1st, 1924, to May 9th, 1925, from my books, which to the best of my belief are kept correctly.

TRADING ACCOUNT STATEMENT.

MOORCOT POULTRY FARM.

DR.	£	s.	d.	CR.	£	s.	d.
To Sales Eggs	107	15	0	By Cost Feed, £96 8s. 6d. less £2, made up of for feed of chicks £1 2s. 1d. and 7s. 11d.	94	8	6
Sales Poultry	6	12	0	Sales Commission ...	6	8	9
Eggs in Store	3	0	0	Porterage	2	13	0
Feed in Store	5	0	0	Balance Profit for 6 months	16	16	9
	£122	7	0		£122	7	0

Which, allowing for eggs used for domestic purposes, means £1 per week, which should cover my 5s. per week for oil for incubators and hovers, and other usual charges.

But, wait a minute, where are my duds which I am holding till I settle up other matters that do not enter into this?

EGG STORAGE ESTIMATE.

DR.	£	s.	d.	CR.	£	s.	d.
960 doz. Eggs June-July at 2/6	120	0	0	Feed 2 months at £17	34	0	0
				Chilling & porterage*	15	0	0
				Balance Profit	71	0	0
					£120	0	0

* This may be too much, but it is not too little.

Now, what about my eggs which Mr. Burn-Murdoch says I am a fool to sell less than 2d., whilst he gets it regularly at his doorstep?

DEAD TRADE ESTIMATE.

DR.	£	s.	d.	C.R.	£	s.	d.
150 Hens and Cockerels plucked and drawn for table at 4s.	30	0	0	Feed (halved as not sold at one time) ...	7	10	0
				Porterage	2	10	0
				Balance profit	20	0	0
					£30	0	0

There is enough here to cover all my outlay (namely, £100) for one season's expenses, and a reasonable sum in my own pocket towards my private requirements. At any rate, it does a little better than paying bare wages, which for that period, December 1st to, say, end of poultry year, is not a heavy charge upon my little business, which is run by almost 440 hens.

There is encouragement to make me try again.

Now, then, supposing I join the S.P.B.A. Scheme, which is a community scheme, I shall benefit by getting cheaper and better quality food plus more eggs.

This may be, to an expert like Mr. Hall, very poor and primitive as a novice's effort, but I don't think he will curtly rule me out, rather he may let me gently profit by his better experience.

In conclusion, my capital was between £300-£400, at the outside £500, and the interest on is at least as good as any other hobby can retu

In addition to this, I have had a very tryi winter experience, which might have been d astrous but for dogged determination to succeed.

I may say that my farm, exclusive of freeho has been valued at £1,400 by an expert known everybody.

Yours truly,

A. MORTON NANCE.

POST-MORTEMS.

R. T. The post-mortem examination of year-old White Leghorn hen showed that the li and kidneys were in a state of Amyloid degene tion. The diarrhoea noticed was Nature's eff at eliminating the effete matters of the body t the kidneys were unable to do from their deceas condition. There is no treatment for this c dition, and the cause, although supposed to dietetic, is really unknown.

P. C. T. The post-mortem examination on four chicks showed that one was affected w Cocciodiosis, and that perforation of the gizz by nails was the trouble in the other three. I weakness is only a symptom of a variety of poul diseases, and I should strongly suspect that ones that died showing that symptom were reality affected with Coccidiosis. I should adv putting the whole of this flock and any inconta on the catechu treatment, one dram in every th gallons of the drinking water, for a month, carefully disinfecting the houses and runs.

H. A. (Suffolk). The post-mortem examinat showed no lesions of disease, or of worms, undigested food was found throughout the ca Over-feeding is, I think, the cause of the trou and especially in the matter of the grain rati from which I should advise deleting the rice.

APPLICATIONS FOR MEMBERSHIP.

Whittome. J. E., Turnham's Gill, Henfield, Sussex.
Sampson, Mrs. D. A., Stokesay, Sidmouth.
Wilson, Mrs E., Manor House, Manfield, Darlington.
Hobson, Capt. E., Filliams, Kirdford, Horsham, Sussex.
Rioch, Geo., 16, Howburn Place, Aberdeen.
Shale, Norman F., "Fernbank," Eckington, Pershore, Worcs.
May, H. W., Nine Mile Ride, Finchampstead, near Wokingha
B
Mills, Nelson, Broaden P.F., Mossley, near Manchester.
Kelly, Mrs. J., Woolston House, North Cadbury, Somerset.
Basting, C. H., 1, Exeter Road, Crediton, Devon.
Crowther Bros., Whitbycroft Cottage P.F., Barrowford, Lan
Collins, Charles E., "St. Vincent," Lake Road, Hamworthy, P
Lock, Percy, Hesketh Bank, near Preston.
Maw, G. T., Holmwood, Horeham Road, Sussex.
Sledge, F. G. N., Little Foord, West Brabourne, near Ashford,
Lindsay, J. M., Grange Avenue, Mayland, Althorne, Chelmsf
Tucker, A. E., Hall Orchard P.F., Buxhall, Stowmarket, Suff
Ryder, J. S., Crown Hotel, Thorpe-le-Soken, Essex.
Watson, A. W. H., Lantern House, Fairlight, near Hastings
Crowfoot, H. R., "Oroland" P.F., Sunningvale Avenue, Bigg
Hill,
Saunders, J. B. Eckwith, "Seakid," Crowstone Road, N.,
Westcliff-on-Sea,
Giles, Charles, Marsh Lane, Cotes Heath, Stafford.
Alkin, Mrs. A. L., Brimley, Churchstanton, Chard, Somerset
Henderson, Edward, Moreno, Mossley Hill, Liverpool.
Candy, G. W., Blagrove Farm, Abingdon, Berks.
Rylance, W., Hawarden Villa, Prescot Road, St. Helens.
Wright, G., Bungalow P.F., Liverpool Road, New Longton, Pr
Hedderly, Mrs. A., Hyde End Lodge, Shinfield, near Readin
Mitchell, R. White, Chapel Yard, Boot Lane, Grendon, Ather
Bagnall, A. G. D., La Roche Clermault, Indre and Loire, Fra

THE LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES.

A meeting of the Council of the above was held in the ster Builders' Room, Mount Street, Preston, on Saturday, y 9th, Mr. J. Wrennal presiding.

Application for affiliation was received from the East Man- ester Gardeners' and Poultry Keepers' Association.

Mr. W. Hamnett reported on a meeting of the National Poul- Council held at Cheshire. This report was adopted.

The Secretary was instructed to send a circular letter to all Lancashire M.P.'s, asking for their support to the Amend- nt Bill in reference to the worrying of fowls by dogs, when comes before the House of Commons.

Mr. A. T. Walker was nominated as Vice-President of the tional Poultry Council, Mr. A. H. Brownson as Treasurer, and auditors Colonel Sandbach and Mr. E. Collier.

Delegates to the National Poultry Council elected were:—Mr. Hamnett, Mr. E. Collier, Mr. Walker, and Dr. Helm. Mr. ove and Mr. Whalley were added as delegates to the National ultry Parliament. The hope was expressed that every Society uld send a delegate to the Poultry Parliament meeting, as y are entitled to do so.

Accounts were passed for payment.

Finance.—Mr. Willacy reported on behalf of this committee t a draw was being held for the fund of the Society. Tickets l be out shortly, and a request is made to every Society to try l make it a big success.

Mr. Longbottom reported on behalf of the Educational and paganda Committee, in the absence of Mr. Grove, that the nmittee did not think the time opportune to take up the stion of ringing birds as suggested by the Barrow Society, l they would recommend that no action should be taken at sent, seeing that a National Scheme is being gone into.

Mr. Longbottom read a letter from Mr. Grove, which stated t sixteen Societies had sent weights of birds, etc., as requested, a circular sent by the Secretary.

Mr. Grove suggested a meeting be called at an early date to ceed further with standard of Exhibition and Utility birds v the weights are to hand.

IE NATIONAL UTILITY POULTRY SOCIETY'S EGG-LAYING TEST, 1924-25.

Report for the Sixth Month—21st March to 17th April.

The records for the sixth month show a further advance in duction, the tally of eggs reaching 42,082, or an average of 3 per bird These figures compare with 37,656 and 1,801 pectively, for the previous month, and they will doubtless ve to be the high point of production for the test. In all vious tests at Bentley the sixth month has proved to be the st productive.

The highest daily collection (1,586 eggs) was made on the venth day of the month, from which point there was a steady ling off as the result of broodiness, which has become very valent. Previously the number of broodies has been well ow the average, but with the arrival of warmer weather, l as a natural consequence of the previous freedom, an rease was to be expected, and as many as 282 birds passes ough the broody coops. Of these 272 were of the heavy breeds, l only 10 of the light.

Of the breed averages to date, that of the Buff Rock stands t with 93.02 eggs per bird. This breed is steadily growing in lic favour, and its hardiness makes it specially valuable. stralorps are making a far better showing than in previous rs, and there is a distinct improvement in the size of their s.

The average size of the eggs laid by all birds is now satis- tory, except in a few pens, and the percentage of first-grade s has reached 86.9.

The general health of the flock was good throughout the nth.

The death rate to date is just under 1½ per cent.

EGG PRODUCTION OF LEADING PENS.

Figures are Eggs and Points to date respectively.

Section 1. Championship (Ten Pullets).—G. B. Metcalfe, Lech- e, Glos. (R.I.R.), 1121, 1118; Frank Snowden, Keighley (W.L.), , 1033; Leslie Williams, Liss, Hants (W.W.), 1015, 1013; Lady ly, Arnold, Notts (R.I.R.), 997, 975; R. A. and A. M. Johnson alford, Glos. (W.W.), 957, 957; Miss Nellie H. Bell, Ightham, at (W.L.), 957, 954.

Section 2. White Leghorns (Five Pullets).—Fred W. Weeks, ith Woodham, Essex, 577, 577; Mrs. E. A. Pallant, Wherstead, wich, 540, 540; Mrs. E. M. L. Knight, Odstock, near Salisbury, 528; Sleights Poultry Farm, Sleights, Yorks., 509, 509; Balsham nor Farm, Linton, Cambs., 507, 506; Clophill Poultry Farm, l., Ampthill, Beds., 502, 501.

Section 3. Black Leghorns (Five Pullets).—Lady Anderson, gent's Park, N.W.1, 599, 537; E. Watkins, Cross-in-Hand, Sussex, 479; Mrs. Mignon E. Clay, Long Preston, Yorks, 476, 476; and Garrett, Wheathampstead, Herts, 472, 472; The Misses day and Rawson, Peterborough, 463, 461; Biggin Poultry Farm, msey, Hunts., 454, 454.

Section 4. Any Other Light Breed (Five Pullets).—P. K. Berry, Market Harborough (An.), 516, 514; J. H. Thompson, Alton, Hants (An.), 459, 459; Robert West, Thornton-le-Fylde (An.), 458, 457; Molassine Co., Ltd., Twyford, Berks (Br. L.), 440, 440; Dr. R. D. Reed, Colchester. Essex (An.), 436, 417; J .E. Hughes, Ware, Herts (An.), 407, 408.

Section 5. White Wyandottes (Five Pullets).—A. K. Spiers Alexander, Roughton, via Norwich, 605, 605; G. Keith Simmons, Honiton, Devon, 596, 596; J. T. Finn, Marple, Cheshire, 561, 561; Chisbury Poultry Farm, Godalming, Surrey, 531, 531; Miss Hastings Irwin, Colchester, Essex, 528, 528; S. and T. Greenall, Grantham, 524, 524.

Section 6. Rhode Island Reds (Five Pullets).—H. John Berry, Ottery St. Mary, Devon, 582, 581; Arthur Gawthropp, Northampton, 565, 561; Lady Dorothy Fraser, Leicester, 558, 558; J. B. V. and W. Cummings, Carlops by Penicuik, Scotland, 524, 524; Lady Seely, Arnold, Notts, 514, 513; Marchioness of Graham, Isle of Arran, Scotland, 510, 509.

Section 7. Sussex (Five Pullets).—T. Brooksbank, Hedon, E. Yorks, 538, 536; F. Rossall-Sandford, Shrewsbury, 536, 536; Mrs. E. M. L. Knight, Salisbury, 511, 511; Lady Anderson, Regent's Park, N.W.1, 486, 486; Mrs. M. G. Alston, Buntingford, Herts, 480, 479; Maunder and Coulson, Yeovil, Somerset, 451, 451.

Section 8. Any Other Heavy Variety (Five Pullets).—A. A. Plimpton, Beverley, Yorks (Bf. R.), 495, 495; A. M. Kemp-Gee, Chesham, Bucks. (Bf. R.), 493, 493; Clarence A. Shuttleworth, Keighley (Bf. Orp.), 473, 473; Miss Harrison Bell, Welwyn, Herts (Bf. R.), 505, 471; Oscar C. Brown, Scunthorpe, Lincs. (Bf. R.), 499, 467; Miss E. Cavanagh, Dublin, Ireland (Bl. Men.), 455, 449.

The Laying Test is open to visitors on Tuesdays and Saturdays, between the hours of 2.0 and 4.0 p.m., and at other times by special appointment with Mr. J. N. Leigh, Dodnash Priory Farm, Bentley, near Ipswich.

THE NORTHERN UTILITY POULTRY SOCIETY'S LAYING COMPETITION, 1924-5.

SIXTH REPORT, 21st MARCH to 17th APRIL, 1925.

The weather has been typical for March, the opening days being fine and frosty, two of the hardest frosts of this winter being experienced, snow falling on three occasions, with gales of wind from north and north-east. Twelve days have been fine and bright.

The health of the flock has not been so good this month as previously, and it is noted that birds which have been the heaviest layers during the winter period are the greatest sufferers, more especially the smaller specimens of the different breeds, and, as a consequence of this, positions are likely to show some change this month.

The return of eggs has been good, only seven pullets failing to contribute, one of these being the only non-producer during the six months; the pen sisters of this bird have an average of 24½ eggs per bird for the month under notice. Three pullets have carried their score over the 130 mark.

DUCK SECTION.

All these competitors are in good health, the highest pen total being made by Mr. A. Shackleton's pen with 100 eggs, all being first grade. This is the only pen of five ducks that has this distinction of all first grade eggs.

MONTHLY RIBBONS.

Monthly ribbons for pens laying largest number of first grade eggs are won by:—Mr. Richard Beesley (W.L.) (Pen 15), 110 eggs; Mr. Richard Harrison (W.L.) (Pen 23), 105 eggs; Mr. R. Duckworth (R.I.R.) (Pen 75), 105 eggs; Mr. J. M. Thomas (R.I.R.) Pen 83), 105 eggs. In Section 6 and 7:—Messrs. Bolton and Gardner (W.W.) (Pen 97), 26 eggs; Mr. H. Dunn (W.W.) (Pen 114), 26 eggs.

EGG PRODUCTION OF LEADING PENS.

Figures are Eggs for 6th Month and Total Points to date respectively:—

Section No. 1—Championship (10 Birds).—Longworth Bros. (W.L.), 208, 856; Mrs. Crooks (W.W.), 189, 835; Mrs. Canning Roberts (W.L.), 193, 786; Leslie Williams (W.W.), 205, 705; G. B. Metcalfe (B.L.), 198, 704; G. H. Rayner (W.W.), 167, 704.

Section No. 2—White Leghorns.—William McMahon, 73, 452; James A. Rigby, 108. 408; Norman F. E. Kimberley. 69, 408; Wilson Beattie, 109, 361; O. Darbyshire, 107, 344; E. J. Stone, 82, 332.

Section No. 3—White Wyandottes.—Mrs. Alec Wilson, 80, 453; Robert P. Virtue, 99, 446; J. E. Helm, 100, 412; Thomas Pinder, 19, 400; James Booth, 78, 378; James Hodgson, 88, 375.

Section No. 4—Any Other Variety (Non-Sitting).—Philip K. Berry (B.L.), 68, 335; Mrs. J. H. Hill (B.L.), 104, 294; Ernest Jackson (B.L.), 89, 263: Robert A. Fawsett (B.L.), 75, 259.

Section No. 5—Any Other Variety (Sitting).—Tom Gardner (R.I.R.), 107, 507; F. & T. Lumb (R.I.R.), 93, 426; J. M. Thomas (R.I.R.), 105, 425; A. Sharples (R.I.R.), 60, 413; F. R. Welch (B.R.), 93, 411.

Section No. 6—Two Birds.—Bolton & Gardner (R.I.R.), 49, 204; E. J. Stone (R.I.R.), 35, 201; Mrs. A. Stow (W.L.), 42, 168; Sam Lord (W.W.), 36, 165; J. Gordon West (R.I.R.), 35, 163.

Section No. 7—Single Bird.—Frank Heyworth (W.W.), 23, 126; R. K. Tallis (W.W.), 21, 113; William Edmondson (R.I.R.), 21, 101; E. J. Stone (W.L.), 23, 98; H. Percy Thubron (W.W.), 22, 97.

Section No. 8—Small Breeders.—Wm. Machin (W.L.), 114, 407; E. M. Saul (W.L.), 71, 377; Mrs. J. H. Early (W.W.), 78, 332; T. Lindley (W.L.), 108, 324; Ellis Jenkinson (W.W.), 102, 319.

Section No. 9—Cross-breds.—Mrs. Clara Egar, 84, 504.

Section No. 10—Ducks.—Mr. and Mrs. Gwynne Evans (K.-C.), 85, 382; Wilson Beattie (K.-C.), 87, 378; Chivers & Sons (K.-C.), 85, 307; Oscar C. Brown (K.-C.), 100, 306.

Section No. 11—Single Ducks.—Oscar C. Brown (K.-C.), 22, 104; Arthur T. Marston (K.-C.), 23, 63; Mrs. E. M. Kirkley (W.R.), 17, 61; A. D. & E. A. Wilkinson (K.-C.), 16, 44.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING FRIDAY, MAY 15th, 1925.

GRAIN AND FEEDING STUFFS.—Moderate supplies of British wheat are in fair demand and recent prices are fully maintained, while at London the average quotation has advanced on the week from 12s. 8d. to 13s. 2d. per cwt. Imported wheat is in rather better request and dearer at all markets, the increases at London ranging from 4d. to 9d. per cwt. British feeding barley is in moderate demand and prices have a firmer tendency, while imported grinding descriptions also generally make fully late rates. Home-grown oats are scarce and dearer at Hull and London, and foreign, which are sparingly offered, are inclined to advance. Maize realises more money, the average quotation for Argentine being 10s. 7d. per cwt. as against 10s. 4d. last week.

Offals are practically unchanged in price at most markets, but at Bristol and Liverpool bran is reduced 5s. per ton. Meals generally record little change in value, but maize meal is 5s. per ton dearer at Hull and Liverpool, where (9 per cent. oil) cake has advanced from £12 12s. 6d. to £12 15s. per ton, and at the same market English cotton-seed cake records an increase of 5s. per ton. Cotton-seed cake is in fair demand at London, and realises rather more money.

MILLERS' OFFALS.—Bran (British): Bristol, £8 12s; Hull, £7 12s; Liverpool. £8; London, £7 10s. Broad Bran: Bristol, £9 17s; Hull, £9 2s; London, £8 17s. Middlings—Fine (Imported): London, £9 12s; Coarse (British): Bristol, £9 2s; Hull, £8 15s; Liverpool, £8 5s; London, £8 7s. Pollards (Imported): Bristol, £7 15s; Hull, £7 5s; Liverpool, £6 17s; London, £7 10s. Rice Bran: Bristol, £7 12s; Liverpool, £7. MEAL.—Barley Meal: Bristol, £11 15s; Hull, £11 8s; London, £12 5s. Maize Meal: Bristol, £12 5s Hull, £11 10s: Liverpool, £11 2s; London, £11. Maize Meal (S. African): Bristol, £11; Hull, £9 15s; Liverpool, £9 17s. Maize Germ Meal: Bristol, £11 5s; Hull, £10; London, £9 10s. Maize Gluten Feed: London, £10 10s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 15s; Liverpool, £9 12s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 13s; London, £13. Fish Meal: Bristol, £20 10s; Hull. £20; Liverpool, £18; London, £20.

EGGS AND DEAD POULTRY.

Fair quantities of British eggs are marketed and recent rates are well held for these, but several secondary grades of the cheaper imported varieties are easier in price.

Week-end Prices—Eggs (per 120): British, 13s 9d, 12s 6d; Irish, 13s 6d, 13s 0d; Danish, 14s 9d, 13s 9d; Dutch, 14s 6d, 13s 6d; French, 14s 0d. 13s 3d; Styrian, 12s 6d, 11s 3d; Italian, 13s 9d, 12s 6d; Egyptian. 9s 9d, 8s 9d; Lithuanian, 12s 6d, 11s 3d; Polish, 11s 6d, 10s 6d; Russian, 12s 0d, 10s 9d.

Dead Poultry (per lb): Fowls—Surrey, 2s 3d, 1s 9d; Irish, 1s 10d, 1s 3d; Others, 1s 11d, 1s 4d. Ducks, 2s 2d, 1s 4d. Geese, 1s 3d, 1s 0d. Turkeys, 1s 6d, 1s 2d.

EGGS.

Per Doz.—Ashford: First, 1s 4d; Second, 1s 3d. Birmingham: First, 1s 3½d; Second, 1s 3d. Bridgwater: First, 1s 5d; Second, 1s 4d. Chelmsford. First, 1s 4½d; Second, 1s 3d. Doncaster: First, 1s 6d. Dorchester: First, 1s 3½d. Exeter: First, 1s 3d. Hereford: First, 1s 1d. King's Lynn: First, 1s 4d; Second, 1s 3d. Llandilo: First, 1s 2d; Second, 1s 1d. Mold: First, 1s 2d; Second, 1s 0d. Montgomery: First, 1s 2d. Newport (Mon.): First, 1s 2d; Second, 1s 1d. Norwich: First, 1s 5d. Oswestry: First, 1s 2d. Penzance: First, 1s 3d; Second, 1s 2d. St. Ives (Hunts): First, 1s 4½d; Second, 1s 3d. Salisbury: First, 1s 3d; Second, 1s 2½d. Skipton: First, 1s 4d. Truro: First, 1s 1d. *Carlisle: First, 1s 4d. *Derby: First, 1s 4d. *Ipswich First, 1s 6d; Second, 1s 3d. *Lincoln: First, 1s 4d. *Shrewsbury: First, 1s 4d; Second, 1s 3d. *York: First, 1s 5d; Second, 1s 4d.

FOWLS.

Per lb.—Birmingham: First, 1s 8d; Second, 10d. Exeter: First, 1s 8d. Hereford: First, 1s 8d. Llandilo: First, 2s 8d; Second, 2s 6d. Newport (Mon.): First, 1s 9d; Second, 1s 4d. Truro: First, 1s 4d. *Derby: First, †5s 6d; Second, †4s 0d. *Ipswich: First, 1s 10d. *Lincoln: †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 1s 4d.

DUCKS.

Per lb.—Exeter: First, 1s 8d.

* At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

CONTENTS.

EDITORIAL ... ...
POULTRY FOODS ... ...
ANGORA RABBIT WOOL FARMING ... ...
LEG WEAKNESS ... ...
ANSWERS TO QUERIES ... ...
UTILITY DUCK CLUB NOTES ... ...
S.P.B.A. ... ...
CORRESPONDENCE ... ...
POST-MORTEMS ... ...
LANCS. FEDERATION OF U.P.S. ... ...
NATIONAL U.P.S. EGG-LAYING TEST ... ...
NORTHERN U.P.S. EGG-LAYING COMPETITION ... ...
KEIGHLEY BRANCH OF S.P.B A. ... ...
CHESHIRE C.C. EGG-LAYING COMPETITION ... ...
MARKET REPORT ... ...

Contributions.—The Editor will always be pleased to consi contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence " Eggs " to their poultry-keeping friends.

Subscriptions to " EGGS," 12s. 8d. per annum; 6s. 4d. for months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, T Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beech Rudgwick, Sussex.

All communications with regard to Advertisements should addressed to Mr. S. H. Burles, " Eggs," 94, Farncombe Stre London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first pa of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of " Eggs," it imperative that new advertisements and alterations are receiv by FIRST POST ON FRIDAY MORNING to ensure insertion in t following Wednesday's issue. It is hardly necessary to add th the earlier in the week we receive copy the better it is for ever one concerned.

PROOFS.

We cannot guarantee to submit proofs unless com plete copy is to hand by FIRST POST ON TH MONDAY PREVIOUS TO THE FOLLOWIN WEDNESDAY WEEK'S ISSUE.

KEIGHLEY BRANCH, S.P.B.A.

A rummage sale will be held in the Temperance Hall, Keig ley, on Saturday, June 13th, 1925. The committee hopes that a members will do their utmost to make the sale a success. Gi something and buy something.

Articles should be deposited in the Lower Temperance Ha on Friday evening, June 12th. Members who are willing gather articles together, but cannot convey them to the Hall, a asked to communicate with the Hon. Sec., Mrs. Wilson, "Minorca Denholme, Bradford, who will arrange for them to be collected.

Further particulars will be announced at the monthly meetin on June 3rd, and will be published in "Keighley News" June 6t

We can all do more than we have ever done yet,
And not be a penny the worse,
It never was loving that emptied the heart,
Nor giving that emptied the purse.

A. WILSON, Hon. Sec.

CHESHIRE COUNTY COUNCIL.

EGG-LAYING COMPETITION.—SINGLE BIRD TEST.

Report on Results for Seventh Month—April 1st to 28th, 1925

The flock average for the month is 19.9 eggs per bird agains 18.6 last month. The average for the Light Breeds is 22.7, an for the Heavy Breeds 17.7.

Nineteen birds have been broody.

W. Leghorn 13 (R. Howard) laid every day during the month.

The position of the leading birds in both sections remain unchanged. Both flocks are in good health, and no deaths hav occurred.

LEADING PENS.

Figures are Eggs for Month, and Total Points to date:—

Light Breeds.—J. Mason (W.L.), 25, 1309; W. J. Fletcher (W.L.) 23, 1205; E. Harrison (W.L.), 25, 1127; Campbell Sheen (W.L.), 2 1096; W. J. Fletcher (W.L.), 23, 1057; A. Tobler (W.L.). 23, 993.

Heavy Breeds.—Liverpool Sanatorium (L.S.), 26, 1243; Mrs. Gar nett (Bf. Rk.), 13, 1192; Tansey Bros. (R.I.R.), 22, 1144; W. T Griffiths (W.W.), 22, 1115; E. Carter (R.I.R.), 23, 1095; E. Paterso (B. Orp), 13, 1069.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, MAY 27th, 1925.

Editorial.

THE WELLINGHAM EXPERIMENTS— GREAT RESULTS.

Iuch interest is being manifested in the llingham experiments which are being conducted the S.P.B.A. under the control of Miss Malcolm Mrs. Pember, and supervised by a sub-comtee appointed by the Council.

he possibility of rearing chicks intensively to a lthy and vigorous maturity was discussed in se columns some months ago. We pleaded for her investigation in view of the succession of strous rearing seasons experienced, due to the aries of our climate, the exposure of chicks to ig winds, and the heavy losses sustained ough damp and wet, etc. Further, we pointed the effect of these conditions on the breeding k, the poor hatchability which had been experied for two seasons, and the questionable value exposing laying pullets and breeding stock ng the six worst months of the year, when e is no insect life, and little or no value in etable life.

arious views on the subject were expressed by readers. Those who remembered the failures h followed the great boom of the Intensive em, on its introduction in 1912, were urally not favourably disposed towards it, but re can teach us much, and we can at least d the mistakes of the past when we venture n.

e Council of the S.P.B.A. determined to make experiment in the early months of the year, as as thought the test would be more severe. e hundred Leghorns chicks were hatched on uary 7th. These were divided into two lots 50 each, and placed under blue-flame hovers. e one there was floor ventilation, in the other chicks were on the boards. The house is a -roof type, and will take 180 fully developed ts. Later on we hope to publish photographs the dimensions. The window frames in the are removable, so that the chicks get the st possible advantage of the sun. It was cted that the chicks on the ventilated floor d show to greater advantage than the others, for the first month they seemed to do so, but was soon found to be more apparent than real, and there is nothing to choose between the two lots at the present time. A slight outbreak of leg-weakness occurred during the fourth week, but this was speedily checked by the addition of cod liver oil to the mash, and only two chicks were affected. One hundred and forty-six cockerels were removed at the end of the sixth week, and at the present time there are 145 pullets. One of these is roach backed, and three are rumpless. These will be removed, as, although in all other respects perfectly healthy, they are unsightly. The pullets are now 14 weeks old, all thoroughly well developed with plenty of bone, and all are perfectly healthy. A few are reddening up, and some will probably lay within the next month. The birds compare most favourably with any which have been reared on range, they are very uniform, and it will be noted that the mortality is less than five per cent. Two chicks were accidentally killed. The feeding has been all dry mash, the formula being that given in the Register of the S.P.B.A. Green food, mostly lawn clippings, is fed regularly and freely. The cockerels, after removal, were placed in colony houses. The change did not suit them, although there were no losses, there was a most decided check, from which they took some little time to recover.

It is far too early yet to express an opinion. The rearing stage, the most critical, has been passed with a very low mortality, and we have a splendidly healthy lot of pullets. We have now to wait and see; if success is attained, it will be, apart from the management, due to the design of the house more than to any other thing. The chicks have had abundance of light and fresh air. If possible it is intended to breed from the pullets early next year, this is for the sole purpose of testing the fertility and hatchability of intensively-kept birds.

THE FEEDING EXPERIMENT.

In our issue of May 13th we published the report of the feeding experiment with 100 Light Sussex chicks. It will be remembered that the object of the experiment was to see what combination of proteins and mineral salts would permit the use of a minimum amount of dried milk. The average weight attained at the end of the 11th week was 2 lbs. 7.140 ozs.; this in spite of the fact that the majority were pullets. The cockerels have now been trough fed for a fortnight, they will be crammed for a week, and will be killed at 14 weeks old. The following are the weights of the ten heaviest birds, at 13 weeks old, after two weeks trough feeding, showing the gain made. It should be remarked here that all the birds had been fed on nothing but dry mash until they were 11 weeks old. This point is important:—

Ring.	Weights at 11 weeks. lbs.	ozs.	Weight at 13 weeks. lbs.	ozs.
Black	3	2	4	4
Green	3	1	4	6
Yellow	3	1	4	2
Brown	3	—	4	6
Red P.	3	1	4	6
Pink P.	3	—	4	2
Pink S.	3	—	4	4
Blue P.	3	1	3	14
Blue S.	3	5	4	7
White	3	1	4	6
Claret	3	4	4	4

All the birds were in perfect health. We did not see the pullets, but Mr. Meekings assures us they are a very excellent lot, remarkably well developed and in perfect health. The value of this experiment to those interested in the production of poultry for the table, where quick development is of material importance if good profits are to be looked for; is very great. It was suggested at the Harper-Adams' Conference last year that birds intended for the table could not be reared for that purpose on dry mash, but these results entirely refute that idea, and, moreover, the mash is a commercial one. The cost of rearing to eleven weeks old for food alone would be barely twopence per bird per week. In an early issue we hope to publish the final weights of the birds after cramming, and full particulars of the feeding during the last three weeks when they were being fattened.

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES' LAYING COMPETITION.

Held at the Lancashire County Council Farm, Hutton, under the supervision of Mr. C. H. Dobbin, the County Poultry Instructor. The cases of roup are gradually slacking off. W.L. No 57 has yet to lay her first egg. The following have laid 140 eggs or over to date:—Light Breeds: Nos. 1, 18, 27, 39, 69, 77, 79, 112. Heavy Breeds: Nos. 143, 30, 50, 80, 113. Some good records have been put up during the month:—W.L. No. 67, laid 28; No. 39 laid 27; No. 135 laid 27; No. 79 laid 27; No. 16 laid 26; No. 25 laid 26; B.L. No. 54 laid 26; No 96 laid 26; No. 140 laid 26; W.W. No. 17 laid 25; and eleven others have laid 25 eggs in the 28 days.

Seven Month's Report—2nd to 29th April, 1925.

The following are the leading positions in each section, showing number of eggs and points for the seven months:—

Section 1. White Leghorns, Large Breeders (Three Birds).—E Cam, 395, 2346; R. Beesley, 381, 2197; J. Booth, 385, 2145; W. Hamnett, 345, 2071; A. C. Harrison, 355, 2030; J. Sutton, 357, 1871.

Section 2. A.O.V. Light Breeds, Large Breeders (Three Birds).—O. Rawlinson, 368, 1966; Mrs. J. H. Hill, 216, 1095; T. W. Gardner, 221, 1080; W. Hamnett (dead), 198, 1069; F. Lord, 226, 1063; J. P. Willacy, 194, 969

Section 3. White Wyandottes, Large Breeders (Three Birds).—C. Bates, 374, 2238; J. R. Dawson, 345, 2055; P. Williamson (two dead), 324, 2021; W. Hamnett, 307, 1855; Mrs. S. Sefton, 331, 1791; W. Barron (two dead), 331, 1784.

Section 4. A.O.V. Heavy Breeds, Large Breeders (Three Birds). F. Harvey, 347, 2072; A. T. Walker, 336, 1923; W. Weardon and Sons, 327, 1835; T. Braithwaite, 294, 1778; G. Cobham, 350, 1771; T. Edmundson, 299, 1733.

Section 1. Light Breeds. Small Breeders (Single Birds)..—J Stanley, 123, 770; W Ashton, 126, 774; F. Wilkinson, 145, 704; W. Fletcher, 122, 698; G. A. Wostenholme, 117, 685; O. R. Lees, 116, 664.

Section 2. Heavy Breeds, Small Breeders (Single Birds).—J. W. Pearson, 140. 860; H. Harrison, 118, 629; W. R Robinson, 102, 613; D. Braithwaite, 110, 576; A. D. Walton, 110, 546; Mrs. J. A. Mellor, 98. 494.

Diphtheria in Poultry

(Roup or Bird Pox).

(We are enabled to publish the following article by the courtesy of the Editor of the "Journal of the Ministry of Agriculture.")

At the present time most investigators are agre that avian diphtheria and bird pox are merely t forms of the same disease. It is also known unde number of other names, such as roup, diphther diphtheritic roup, contagious epithelioma, chicken p contagious catarrh, canker, etc. It is very widesprea and is probably the commonest malady met with adult fowls in this country.

Causal Agent.—This has been the subject of mu research. and has given rise to a great deal of c troversy. It still remains a disputed question as which of several particular agents described is t cause of the disease. The weight of evidence, ho ever, points to the disease being due to a resista filter-passing virus. Clinical evidence strongly s ports the theory of a single virus, as the various for may be observed in an infected flock at the same tin

Birds Affected.—Fowls and pigeons are partic larly susceptible. It is seen frequently in turke geese, ducks and guinea fowl, and pheasants, qu and various wild birds may also be attacked. Th is a great variation in individual susceptibility, you and well-bred birds being the least resistant, wh some birds appear to have a natural immunity.

The immunity acquired from an attack of t disease varies in strength and duration. A seve attack produces a strong and lasting immunity, wh a mild attack gives only a partial protection of sh duration.

Flocks are most severely attacked during the autu and winter months. In some outbreaks a small p centage only is affected, and the death rate is low; other cases the majority of a flock contract the disea with a mortality up to 90 per cent. Factors whi influence the mortality are the degree of exposure infection, virulence of the virus, adverse weather c ditions, and insanitary houses.

Mode of Infection and Method of Spread.—Ma of the conditions governing the route of infection not fully understood. The virus is believed to g entrance to the system either by an abrasion of t skin or by ingestion, and to pass to the sites of p dilection by way of the blood stream. This disease spread by direct or indirect contact of healthy a diseased birds, and may be carried by the han clothes or boots of attendants.

Symptoms.—The interval which elapses betwe actual infection taking place and the onset of t symptoms depends on the activity of this or that vir It is generally from three to twelve days.

Three clinical forms of the disease are recognised:

(1) Avian diphtheria, characterised by the p sence of false membranes in the mouth.

(2) Bird pox, a diseased condition of the unfeathered parts of the head.

(3) A combination of the forms of the skin and mucous membranes.

(1) *Avian Diphtheria.*—The premonitory symptoms re dullness, loss of appetite, sneezing, and an occaional hard cough. These are followed by a watery asal discharge, which gradually becomes thickened, nd obstructs the nasal passages. The eyes are wollen, inflamed and discharge a viscid material which ticks the eyelids together. In many case the head is wollen, on one or both sides, below and in front of the ye, due to an accumulation of exudate within the nfra-orbital sinus. This condition is known as "oneyed roup."

Owing to the obstruction in the nasal cavity breathng occurs through the mouth, and the passage of air ver the tongue causes a drying and hardening of the ip, and sets up the condition popularly referred to as 'pip." The catarrhal symptoms are followed by the rmation of false membranes in the mouth, throat, and vind-pipe.

These false membranes are of tough, greyish or ellowish exudate which adheres very firmly to the nderlying tissues, considerable force being required to etach them. The removal of the exudate leaves the nderlying surface inflamed and ulcerated, and a new eposit is soon formed. The false membranes spread ntil eventually the whole of the mouth and nostrils re involved, and even the lungs and crop may be ıvaded. These deposits make swallowing difficult or npossible, barely sufficient air can be inhaled to suport life, diarrhoea and emaciation occur from the bsorption of toxic products, and death soon follows.

In acute cases death may occur from suffocation ithin a couple of days of the onset of symptoms from n accumulation of exudate in the opening of the windipe. The duration of the disease, however, is usually om two to three weeks. Complete recovery may take lace or the disease may assume a chronic form which sts many months. When the eyes are involved the rds become emaciated and die from starvation owing their inability to see the food.

(2) *Bird Pox, or Contagious Epithelioma.*—This form the disease appears as warty-looking nodules on the atherless parts of the head, such as the comb and attles, the eyelids and adjacent skin. In severe ses the lesions may spread over the feathered parts the head and neck, outer surface of the thighs, and e points of the wings.

The lesions first appear as flat nodules, which crease in size until they attain the dimensions of a mp seed or even larger. They have a tendency to alesce into cauliflower-like masses. The nodules are m, yellow in colour, gradually turning darker with e. When the lesions are confined to the skin of the ad the health of the bird does not appear to be fected, and recovery usually takes place without eatment in ten to twelve days.

(3) *Combined Form* —The nodules on the head are ten co-existent with diphtheritic lesions in the mouth d nasal cavity, and in such cases the mortality may ach 90 per cent.

Treatment.—When an affected bird is found, it ould be isolated immediately. The healthy stock should be divided into small lots, and the mouth and throat inspected daily. Birds showing the slightest signs of disease should be at once removed and isolated. The houses, fittings and utensils should be disinfected regularly during an outbreak. A minimum quantity of litter should be allowed, and it should be changed frequently. The drinking water should be renewed daily. The grain should be fed in troughs, and the use of dry mash hoppers discontinued. A separate attendant should be provided for sick birds; if this is impossible they should be dealt with last. The attendant should thoroughly disinfect his hands and boots before leaving the infected premises.

When only a small number of birds are affected, individual treatment may be carried out, with strict isolation.

The discharge should be removed from the nostrils by gentle pressure, and the nasal passages syringed out with a mild antiseptic solution. Suitable antiseptic solutions are two per cent. permanganate of potash, three per cent. boracic acid, or hydrogen peroxide.

The exudate should be removed from the eyes and two drops of a 20 per cent. solution of argyrol instilled into them twice daily.

Diphtheria lesions in the mouth may be treated with tincture of iodine after removal of the exudate. The opening into the wind-pipe should be examined, and if any exudate is present it should be gently removed.

When a large number of birds are affected the best method of treatment is to submerge the head in a suitable antiseptic solution for a period of 30 seconds, keeping the mouth open and the beak elevated. This should be repeated twice daily.

Swellings under the eye should be freely opened and syringed out with an antiseptic solution until the contents are removed.

Prevention.—Infection may be introduced by the purchase of birds from infected flocks, or by those returned from shows or laying tests. New purchases and returned birds should be isolated for one month, and examined frequently during that period before being allowed to join the healthy stock.

The aim of every poultry-keeper should be the prevention rather than the cure of contagious disease; therefore, when dealing with the first few cases of an outbreak the policy of destruction is one which merits serious consideration. If the value of the affected birds is not great, it is both advisable and economical to destroy them and diminish the risk of virus accumulating, and the disease spreading to the whole flock. The apparently recovered bird is always a possible source of infection, as it may have developed into a carrier of the disease.

In the majority of cases the effects of a severe disease, such as avian diphtheria, are never entirely eliminated. The bird remains weakened in constitution, and is likely, sooner or later, to fall a victim to some minor ailment which a more robust bird would easily overcome. The birds should be kept under good hygienic conditions, in dry, well-ventilated houses and roomy runs.

Disinfection.—The virus is very resistant, and the most thorough measures are required for its destruction. The first and most important part in the disin-

(Continued at Foot of Column Next Page).

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

T. R. (Gourock). The fowl which you say has a constant drip of milky white fluid from behind, is suffering from vent gleet, and I think you would do well to kill her. However, failing that, remove her at once from the pen as the trouble is highly contagious. Well wash the inside and outside of the vent with some antiseptic, such as a one per cent. solution of Izal, and cut away the feathers. You will have to do this cleaning process at least twice daily. A little flowers of sulphur inserted in the vent would also help matters.

J. L. (Meurthe et Moselle), writing from the Experimental Centre for the Societe d'Aviculture, de L'Est of France, states that he has had a very successful season, up to some little time ago, when they got some new bone meal, which, after using for a few days, they found was bad. As a consequence, they had 25 deaths in one day. On examining the dead they found nothing abnormal, save spaces of air or gas in the intestines, and no food in the crop. They, apparently, died of starvation as well as poisoning by the bone meal. Now this is changed, they have white diarrhoea, chicks dying, eat a little and drink a lot, when not too far gone. The chicks seem healthy enough until the day before they die, when they stay under the hovers with drooping wings, and they cannot stand on their legs. The mash formula is given, and samples have been sent me. I can detect nothing wrong with these, and am not inclined to believe that the foods are the cause of the trouble. It is impossible to be definite, but from the symptoms described, I believe the mortality now is due to Coccidiosis. My correspondent should have a post-mortem examination made. The huddling which he describes, and the other symptoms are indicative of this. The fact that they cannot
stand on their legs may, of course, be due simply t
weakness. I think he would be well advised to ki
off all the sick chicks, remove the remainder fror
under the hover on fresh ground, and give 15 grain
of powdered catechu to the gallon of drinking wate
and allow them nothing else to drink, watch carefull
for every sick chick, and kill it at once. Assumin
the disease is Coccidiosis, I am inclined to think ther
is something wrong with his brooding managemen
as the chicks are under a 500-size hover, and wher
those are not properly ventilated often great debilit
is caused, and chicks from three to five weeks of ag
suffer very badly.

J. W. (Rhondda) says that he read something i
these columns a few weeks ago *re* scaly leg, and h
wants it repeated. I do not remember actually wha
it was, but someone wrote and asked if scaly leg
were hereditary, and I pointed out that it was not s
although some seemed to be immune. The trouble
due to a parasite which gets under the scales, and th
crawls along the perch from one infected bird
another. Scrubbing with warm soapy water in the fir
place and then applying equal parts linseed oil and par
ffin is very effective. A 5 per cent. solution of Izal wi
help and answer equally as well. In answer to my co
respondent's further question about the top of th
heads of his R.I. Reds going bald. He need not wor
much over this. It is often the case with heavy layer
However, it may be due in this case to the deplumin
mite, and in that case he should soak the affected sp
with a one per cent. solution of Izal. With regard
the farm he asks about at Stratford, in Essex, as
whether it is worth dealing with or no, the answer
emphatically "NO."

D. G. (Loch Fynne) asks:—"Is it usual f
broody hens and pullets to lose their breast feathe
when sitting?" It is very common for them to
so. (2) "A R.I. Red hen suffered from prolaps
last summer, but she was shut up and seemed
recover and laid again this spring fairly steadil
Suddenly her tail drooped, and she appeared
have another prolapsus. I decided to kill her f
table. On drawing her we discovered several yol
which looked hard-boiled, and the walls of th

DIPHTHERIA IN POULTRY—Continued.

fection of an infected building is the thorough cleansi
of the interior by scraping and sweeping. The dro
pings, scrapings and litter should be burned or mix
with quick lime and removed from contact with fow

The walls and roost should be scrubbed with h
water containing caustic soda (10 per cent.) to remo
all dirt and grease. This also acts as a disinfecta
The house may then be washed or sprayed with a dis
fectant, such as five per cent. solution of carbolic ac
two per cent. solution of compound cresol, or two p
cent. solution of formaldehyde. The infected ru
should be top-dressed with quicklime at the rate of t
tons to the acre, and, where practicable, ploughed
and left vacant for six months. Dead birds should
burned or buried in quicklime.

ovary were about quarter of an inch thick." It is not a question of " appearing " to have another prolapsus. If there had been prolapsus it would have been apparent. The drooping of the tail was undoubtedly caused by the " several yolks " which my correspondent describes as " looking hard-boiled," and which were in the oviduct and not he ovary. Such cases are not uncommon, especially with very heavy producing hens, and are, I think, caused by the muscular weakness of the oviduct. My correspondent's third question is that he chicks hatched under a hen seem to thrive much better than those in the brooder. The latter seem to get diarrhoea, gradually pine away, and become feeble and die. They paste up behind, and he diarrhoea is white. The chicks under the hens from the same stock birds do not seem to get this diarrhoea. Fifty per cent. of the first brooder lot were lost. In the second lot the sick were separated immediately, and the others did not seem to be getting it. I cannot, of course, say what the cause of this may be. It may be due to chill or to bad feeding, but in that case the hen-hatched chicks would suffer as well. It would be advisable to give 40 grains of citrate of iron and quinine to each gallon of drinking water, and allow he birds nothing else to drink. It does not seem o me to be an infectious trouble, in spite of the fact that the others do not get it when the sick chicks are removed. With regard to the samples sent, the broad bran at 9s. 9d. per cwt. is of good average quality, and fair value for money. The wheat is a moderately good sample, but decidedly dear at 17s. 6d. per cwt. The chick eed at 28s. per cwt. is very dear, and contains millet, which is not an advantage. The biscuit meal is a good sample at 18s. 6d., but the thirds are little better than fine bran, and very dear at 0s. 9d. To use them in combination with bran would be a very great mistake.

Q. K. W. (Leeds). I do not think there would be much risk in the use of this sample of meat nd bone meal which you send, although it is made rom the carcases of animals which have died a natural death, and in some cases, perhaps in the majority, have died from disease. Still, any risk of disease would be obviated by the treatment which the carcases undergo. I do not like the mell, and candidly I would prefer not to use it. The white appearance is merely bone. The sample of ground oats sent is excellent value for the money.

" Anxious " (Four Marks) should not write nder a non-de-plume when he has sick fowls, as is birds require immediate attention, and he will ow have to wait until this issue is published. What a pity it is he is not a member of the S.P.B.A., then he would have had a reply by post immediately, and possibly saved himself the subscription ten times over. He has R.I. Red hens, which e says are quite normal, except perhaps a little sign of difficult breathing owing to a phlegmy substance in the wind-pipe. At every breath there is a peculiar sound like air bubbling. I am afraid he has Diphtheretic Roup, and he should isolate these birds at once, remove any substance in the mouth with a piece of blunt stick, taking care not to make it bleed, and paint the spot with tincture of iodine, wash out the birds' nostrils with a strong solution of permanganate of potash, holding the nostrils in the solution until the birds cough. Give plenty of fresh green food, and also give half a pound of flowers of sulphur in the mash to every 100 birds every other day. I am afraid he has not made his question as to the inheritance of Zero L1 and L2 factors clear.

" Interested " (Dundee) asks if it is possible to buy good second-hand hen houses. It will always be best to inspect these if possible, or, at least, deposit the money with the Editor of the paper in which the advertisement appeared. My correspondent estimates the cost of hatching and rearing 200 chickens for six months at 7s. each. I think this is a fair estimate. He estimates the cost of a chicken house and hover £10, and for wire netting and posts for one acre £7. I think this is insufficient. A hen house for 100 birds (a good second-hand one) £30. This is a little optimistic, I think. As also is his profit for one year from 90 pullets at 8s. each, while the sale of the cockerels at 3s. 6d. each is put as 15 guineas. He does not tell me what breed he intends to keep, so on that point I cannot answer him. His friend, he says, makes 12s. profit from pullets and 8s. from hens. Presumably he does not mean to suggest that this profit is net, or that it is made up on the sale of the edible egg?

LEGAL.

Questions in this column are answered by Messrs. A. and E. HAMLIN, Hon. Solicitors to the S.P.E.A.

M. W. (Halifax) has asked a question in reference to the claim for a patent which he is informed has just been granted. He wishes to know what his own position is in respect to the use of ventilated floors of every kind, whether slatted ones, wired, perforated, or the like. He has used slatted floors for four seasons. According to the above, does he, along with a host of others, become liable to Royalty charges for the use of these floors?—(Reply).—For the grant of a patent of any invention to be a valid one, the subject-matter of the grant must be new, and shall not be used by others at the time of the grant. If, therefore, slatted floors were in ordinary use by poultry-keepers prior to the grant of the patent, the grant would seem to have been invalid, and the grantee would have no claim against the user of these floors. You should bear in mind that even if a patent be granted, it does not mean to say that it is a valid patent. Not until the patent has been put to test by an action in the Court and decision given by the Court can a patent be held to be valid. Even then, another patent may follow after with some improvement which might render the first patent of no value. Furthermore, it should be borne in mind that an idea cannot have a valid patent, and yet patents have been granted for ideas. However, the subject-matter of this patent would seem to be more than an idea, as it is coupled with the actual article. If the patent be a valid one, then terms would have to be arranged for a licence which would probably attract Royalty charges.—A.E.H.

THE EAST ANGLIAN EGG-LAYING TEST.

Report of Sixth Month—From 5th March to 1st April, 1925.

Although the weather showed no great improvement over the preceding four weeks the number of eggs recorded gave the very satisfactory increase of 500—the total for the month being 3,630. This is no doubt accounted for by the seasonal increase, and it is doubtful if the figure recorded will be surpassed, as broodiness (which has been remarkable for its absence) is now becoming evident.

The percentage of first-grade eggs reached the very creditable figure of 85.4, this being an increase of 3.4 over the previous month; and, as in past years it is noticeable that with the increased production the size of egg is also improved.

The average number of eggs laid per bird over the entire flock amounted to 18.6.

Nine pens recorded 100 eggs or over during the 28 days, the highest being 116 by Messrs. Allen Bros.' White Leghorns, and Mr. A. Gawthropp's R.I.R.'s.

The highest individual score was 27, by a R.I.R. in Section 4, owned by Messrs. Hasler and Co.

At the end of the sixth month Mr. Turner's pen of R.I.R.'s continues to lead the sections comprised of five pullets to a pen. This pen has laid 586 eggs, all but three being first-grade.

In the single bird section, the highest record at the end of the first half of the test is 136 eggs by a Buff Orpington, owned by Mrs. M. Crooks, but as a number of the eggs have failed to reach the first-grade standard, it is compelled to give way in position, in accordance with the rules of the test.

A White Wyandotte belonging to Mrs. Pierce-Grove died during the month from rupture of the oviduct, this being the most unfortunate as the pen is well placed.

The total number of deaths during the six months is two, the cause being in both cases as above.

The health of the flock continues to be excellent.

Figures are Eggs and Points to date.

Section 1. White Leghorns.—Dale Egg Farm, 476, 427; Capt. E. A. Wheeler, 388, 385; Allen Bros., 426, 354.

Section 2. Any Other Non-Sitting Breed.—Miss E. Cavanagh (An.), 421, 421; Major R Lloyd-George (An.), 353, 347; T. R. Berry (Sic. Fds.), 203, 199.

Section 3. White Wyandottes.—Misses D. and M. Keech, 430, 429; General R. L. Mullens, C.B., 462, 415; Mrs. Pierce-Grove, 390, 390.

Section 4. Rhode Island Red.—H. Turner, 568, 586; A. Gawthropp, 406, 397; Nalder and Smith, 371, 371.

Section 5. Any Other Sitting Breed.—T. H. Sochon (L.S.), 411, 411; Misses D. and M. Keech (L.S.), 374, 364; F. D. Montgomerie (B.R.), 116, 115.

Section 6. Single Bird. Any Variety Light Breed.—W. S. Lane W.L.), 120, 120; F. C. Tomlinson (W.L.), 109, 109; E. Fearon (B.L.), 106, 106; Farrant Bros. (W.L.), 95, 95; Miss P. Abercrombie (W.L.), 94, 94.

Section 7. Single Bird, Any Variety, Heavy Breed.—Mr. and Mrs. T. J. McMillan (R.I.R.), 94, 94; Greensward Poultry Farm (W.W.), 88, 88; G. J. Coverly (R.I.R.), 85, 85; Mrs. Pierce-Grove (W.W.), 85, 85; E. Fearon (R.I.R.), 98, 84; Rd. Champion (W.W.), 80, 80.

Note. Five pullets in Sections 1-4, and one pullet in Sections 6-7 constitute a pen.

W. T. WILLIAMS, Hon. Secretary,
Millfields, Rayne, Essex.

GLAMORGAN AGRICULTURAL COMMITTEE.

County Egg Laying Trials, 1924-25, at Lower House Farm, Llantwit Major. 19th October, 1924—22nd August, 1925.

Figures are Eggs for last four weeks and Eggs for the six months.

Heavy Breeds.—Mrs. U. Jenner, Wenvoe (W.W.), 25, 128; D. A. Hann, Pengam (W.W.), 63, 182; J. Joshua, Tondu (W.W.), 61, 301; E. Orchard, Abertridwr (W.W.), 59, 176; C. Gronow, Pontadulais (W.W.), 17, 29; D. A. Rees, Ton Pentre (W.W.), 33, 146

Light Breeds.—Mrs. U. Jenner, Wenvoe (W.L.), 11, 115; D. A. Hann, Pengam (W.L.), 57, 78; J. Joshua, Tondu (W.L.), 67, 261; C. Spiller, St. Fagans (W.L.), 35, 137; R. J. Evans, Abertridwr (W.L.), 55, 215; Howell and Phillips, Barry (W.L.), 49, 165.

Poultry Foods,

THEIR NATURE, COMPOSITION, EXAMINATION, AND ADULTERATION.

By HAROLD T. CRANFIELD.

Advisory Chemist to the Midland Agricultural and Dairy College. Late Official Agricultural Analyst to the Counties of Notts. and Lindsey (Lincs.). Member of the Society of Public Analysts.

Continued.

COMPOUNDING RATIONS.

The art of feeding animals consists in giving daily ration which is reasonably sufficient (a) t maintain the body condition of the animal, i.e. repair waste tissue, keep up the body temperature produce energy to evaporate water, and to effec adequate digestion of food; (b) to allow growth to take place in the case of immature animals; (c to produce energy for work, in the case of working animals; (d) to provide material for milk pro duction or egg production; (e) to provide materia for fattening. Since we have to deal with thre main feeding constituents it is necessary to reduc them to a common basis so as to simplify calculation in working out rations. A system has therefore been adopted in which the digestible protein and fat are reduced to a basal value o starch, and, added to the digestible carbohydrate and fibre, give a figure called the "starch equivalent" or "starch value" of the food. Thus if food has a starch value of 70 this means tha 100 lbs. of the food in question should give the same increase in weight, or produce the same food effect, as 70 lbs. of starch. However, this is no quite correct, particularly in the case of fibrous foods, owing to the considerable amount of energy expended in digestion, and therefore an "availability co-efficient" is necessary by which the calculated starch value is multiplied to obtain more real starch value. In the case of cattle and sheep this system has been fairly well investigated, but as regards poultry much remains t be done. At present we can only work on rough lines and modify the ration by observation.

Starch value is calculated as follows:—

% digestible protein X .94, added to
% digestible fat X—
2.4 in the case of oil seed residues.
2.1 in the case of cereals.
1.9 in the case of coarse fodders.
added to
% digestible carbohydrates and digestible fibre.

One other important point must not be overlooked, and that is the "albuminoid" or "nutrient ratio." The percentage of protein (albuminoid) in a ration must not fall below a certain figure, otherwise the animal will not digest its food properly. This is usually expressed as a ratio of the digestible otein to the other constituents expressed in terms starch equivalent. An example of this calcution is as follows :—A poultry feeder decides to e wheat for the grain portion of the ration, and ie sharps, maize, soya and fish meals for the eal portion of the ration. Now the percentages digestible nutrients, etc., of these foodstuffs given in tables are as follows :—

	Protein.	Oil.	Carbs. & Fibre.	Albd. ratio.	Starch equiv.
Vheat	9	1¼	65	1:7½	72
ine Sharps	13	3	54	1:5	70
Iaize Meal	7	4	67	1:11¼	81
ish Meal	46	4	—	1:1/5	53
oya Meal (extr.)	36	1¼	28	1:¾	64

Now, from the above figures, one can easily lculate that a total daily ration consisting of : heat 50 per cent., fine sharps 25 per cent., maize eal 10 per cent., fish meal 10 per cent., soya eal (extr.) 5 per cent., would give an albunoid ration of 1:4.7 and a starch equivalent of .

There is little information available regarding eding standards for poultry—in fact, there is urgent need for scientific feeding experiments determine the starch equivalent and albuminoid tio necessary for either growth, egg production fattening. Woll, an American writer, advocates e following albuminoid ratios for chickens, ducks d turkeys :—

owing stock	1:3.7—4.0
ying and breeding stock (Heavy breeds)	1:4.2—4.6
ying and breeding stock (Light breeds)	1:4.6
lult stock for fattening	1:5.5—6.5
ate fattened birds	1:4.0—5.0

These ratios should apply to the total daily tion and not to the meal portion only. As gards quantity of food, Woll states that "to feed the fowls will eat up clean" represents the esent state of our knowledge.

VITAMINES.

Finally we come to the much-debated question "vitamines." A vitamine can be defined as a owth factor, i.e., a substance present in foodiffs which is absolutely essential for proper rmal growth. Up to the present no vitamine s been prepared in a state of purity, but conitrated essences of vitamines of high potency ve been prepared recently. There appears to several—three or four—types of vitamines, each which has, according to the results of numerous periments, some definite function to perform in owth. Absence of one particular vitamine may ise a deficiency disease, e.g., rickets. There evidence, however, that other food constituents, rticularly those of mineral composition, are ally concerned in the normal growth of animals, and it is difficult at the present state of our knowledge to decide absolutely the specific functions of vitamines and their relative importance in nutrition apart from the other constituents of foods.

Research into problems concerning poultry nutrition is being vigorously pursued at the Animal Nutrition Institute, Cambridge, and the Rowett Research Institute, Aberdeen, and also in the laboratories of several private research workers in London and elsewhere. It is hoped that these efforts will speedily bear fruit, and throw more light on this branch of poultry management which is admittedly of such great importance to the poultry industry.

(Continued at Foot of Next Column).

Correspondence.

LEG WEAKNESS AND BOWEL TROUBLE.

To the Editor of "Eggs."

Dear Mr. Newman,—In last week's "Eggs" you published a **most** interesting letter under the above heading from Mr. Winthrope Somerville, which may have quite unexpectedly great results in mitigating and preventing bowel trouble in chicks if the subject is carefully investigated by a competent Research Board so that correct deductions can be made.

At the end of his letter you say : "The extraordinary effect of limewater on chicks hatched under such abnormal conditions is puzzling in the extreme, and it would be wise not to attempt an explanation."

I accept your advice in regard to Mr. Somerville's experiment, but if you can find room for this letter in "Eggs" I think it will afford corroborative testimony based on the experience of long years ago of the effective administration of limewater and milk for bowel trouble, not in chickens, but in babies!

I was stationed at a certain station in India, and a great many babies which were being brought up on cow's milk suffered from gastric and intestinal trouble which was manifested in different ways. In some, after taking a little milk, for which they appeared very eager, vomiting occurred, and in these, as a result, intestinal trouble did not occur. Those that were able to keep the milk down (i.e., did not vomit) were all affected with diarrhoea. In all cases an equal quantity of limewater was ordered to be added to the milk, and in many cases this was sufficient to put an end to the trouble, but not quite in all.

In the more obstinate cases, in addition to the limewater, a dessertspoonful of gelatine, prepared as follows, was added to the bottle—a breakfast cup was half filled with Nelson's gelatine and the cup filled with cold water. When soft it was brought to the boil and then allowed to cool. Of this jelly a dessertspoonful was added to the milk and limewater, and in every case this was effectual.

Mr. Somerville's idea apparently was to induce diarrhoea by bad incubation, and then set about to find a cure, though what induced him to try limewater he does not say.

To go back to the babies, however, the cause of the diarrhoea was much more interesting, and because it may also be the cause of some of the bowel trouble in chicks, I write this letter.

In the Punjab, before the rains, grass is conspicuous by its absence, and to remedy this deficiency and increase the milk yield cottonseed cake is given. **This was found on investigation to be in every case the cause of the trouble.**

Now we have taken lately to feeding milk to all young chicks, and usually with beneficial results. But our hatchings get earlier, and December is the usual month to see the first table chickens out in the Heathfield district, whilst January hatchings of early Leghorns is not uncommon. In these winter months our cows are being fed on oil cake too, and may such milk not be the cause of some of the bowel trouble in our chicks?

It would be very interesting if our Research Board were to carry out the two following experiments and publish results.

Experiment I.—Take 50 White Leghorn chicks (I specify White Leghorns, as I believe them to be more susceptible than the heavy breeds to bowel trouble), and divide these into two lots of 25 each, feed one lot on milk from cows fed definitely on oil cake, and the others on milk from cows which have never had any, and note the result.

Experiment II.—Feed both lots on milk from cows fed on oil or cottonseed cake, but in one case add limewater and gelatine to the milk, and again note results.

Subsidiary causes of diarrhoea, such as chills, etc., must of course be guarded against.

Apart, however, from the cotton seed or oil cake idea, is it reasonable to suppose that cows' milk can be digested by all chickens alike any more than by all babies alike, or adults for that matter? The addition of half limewater may, by diluting the milk, render it more digestible to those with weaker digestions, whilst the calcium hydrate being an alkali would tend to reduce any tendency to acidity due to the lactic acid.

One has only to visit poultry farms, with one's eyes open, to see how **many** cases of bowel trouble there are amongst young chickens, and I am quite sure of one thing, and that is that if those who have chickens whose "rearmost anatomy" shows liquid excreta piled up outside the vent in a hard cake, **they can do absolutely no harm,** and will probably be surprised by the beneficial results of feeding milk with limewater and gelatine.

Apologising for the length of this letter.

"ANGLO-INDIAN."

LEG WEAKNESS.

To the Editor of "Eggs."

Dear Sir,—I think a great deal of the discussi on this question is caused owing to it not bei recognised that there are at least two kinds leg weakness :—

(2) That due to lack of lime, which appears fr the 8th to 14th day of a chick's life. It may diagnosed by seeing if the lower mandible flexible. The chick appears "spread-eagled."

(2) A later kind due to lack of vitamins. T appears between the 3rd and 6th week, a especially if growth is rapid. In this case t lower mandible is stiff. The chick can run fa but cannot stand erect or walk.

These are the only kinds I have notice Naturally, there may be others, due to vario causes, such as bad ventilation. As the cause each separate variety is quite distinct, this m account for the many conflicting experiences o has read about.

Yours truly,

P. WASHINGTON.

REARING.

To the Editor of "Eggs."

Dear Sir,—You were good enough to interested in my brooding experiences last seaso, and on the strength of this I venture to write y again.

I have carefully followed your suggestions as incubator temperatures again this year, and ha averaged 85 per cent. of fertile eggs. Last yea average was 86 per cent. My incubator house is low wooden building with wood floor, raised brick piers one foot from the ground. About eig holes 1½ inches in diameter are drilled through t floor immediately under the lamp side of t machines, which are Glevums. Top ventilation by ridge. Being a wooden building the outsi temperature carries some 20 degrees, and occ sionally the lamps have had to be turned down f an hour or two during the hottest part of t day. Hatches under hens have produced appro mately 87 per cent.

I converted all my brooders to bottom ven lation by means of ventilated floors of perforat zinc, and out of some 650 chicks hatched not o has died of leg weakness, which confirms n experience last year, after giving bottom ven lation.

From the above I am convinced that leg weakne is a matter of ventilation, and not diet, at least far as chicken rearing on this farm is concerned.

Yours faithfully,

REGINALD P. YATES.

R.I. RED RECORDS.

To the Editor of "Eggs."

Dear Sir,—In your issue of April 8th last Mr. W. Iall stated in a letter that his sons' pen of R.I. Reds in the "Daily Mail" (1919/20) Test made a igher score than any pen which won the Gold Iedal at Harper-Adams' laying trials in 1921, six irds laying 1,324 eggs in 48 weeks—money value 16 6s. 3d. Total weight of eggs, 2,838 ozs.

Mr. Hall omitted to state that his pen consisted f only four birds, also that the record was for 52 eeks, and gives no details of the grade of egg roduced, which is a very material point. Moreover, the record which he gives is not an official ecord for the twelve months—only for the four inter months, as this test was only a four months' est—not a twelve months' test. In making comarisons it is only possible to compare things hich are equal. Mr. Hall compares his pen of our birds with any pen of six birds. He also ompares a record of 48 weeks with one of 52 eeks, which gives his birds the advantage of a onth in time. No record is stated of grade and o record of money value.

All laying trial reports prove that it is much asier to make a higher average record with a mall pen than it is with a large pen. The record or a pen of six birds in this country is, I believe, eld by Mr. Ed. Cam's White Wyandottes, which ade an average of 249.2 for the twelve months, hereas the record for a pen of ten birds is held y my pen of R.I. Reds which won the Gold Medal nd Cup, Lancashire International Laying Trials, ying 2,219 eggs, valued at £19 0s. 11½d., in 8 weeks; weight of eggs 4.722 ozs. The best verage therefore for a pen of ten birds is 221.9 ompared with 240.2 for six birds.

Mr. Hall will perhaps say if this is so or not.

Yours faithfully,
W. M. GOLDEN.

R.I. RED HEN RECORD (BOUCHER).

To the Editor of "Eggs."

Dear Sir,—Mr. W. M. Golden asks for impartial idence of the records of Mr. Boucher's famous n. This I cannot give, as I have never been to r. Boucher's farm, and only seen him once at a stance, but I can say that hens sold to me as osely related to this hen are now in the fifth year, art from their value as breeders, still paying for eir keep by egg production. They were not lected from hundreds, but just six I bought, and ey have always laid 2oz. to 2½oz. eggs, and one w is slightly rough shelled. So that it looks as No. 37 really was the "goods" or I have been tremely lucky.

As I am not looking for a free advertisement, d being only a comparative beginner, I quote records, having no impartial bona fide evidence, d sign myself

"NEVER BROODY."

SALE OF EGGS.

To the Editor of "Eggs."

Dear Sir,—Will you kindly allow me to reply to "Commercial Egg Farmer" and to Mr. Hugh W. Baker, who criticise my letter of the 29th April?

"Commercial Egg Farmer" (C.E.F. for short) says that if he did as I did, i.e., refused to sell his eggs at less than 2d. each, during March to June, his "Regular" customers would chuck him and go elsewhere. From this statement I take it he has no settled contracts at all, but simply grows eggs, and trusts to luck as to selling them as best he can.

If a poultry farmer sets up to produce and sell eggs in anything like a business-like way he must allow for a large margin of safety in the size of his flock to meet the requirements of his **regular** customers in winter. This means, of course, that he will have a large surplus of "Springtime eggs" which have not been contracted for. What does "C.E.F." do with his surplus? From his letter I presume he sells them as best he can, taking any price, practically, that a host of more or less combined "Squeezers" will offer him, because it isn't "convenient" for him to do otherwise. I fancy if we change the word convenient to impossible we will be nearer the mark, i.e., "C.E.F." has not got capital enough to wait three or four months for his returns. Mr. Hugh M. Baker (H.M.B. for short) presumes that I am in the happy financial position of not caring a rap for anyone—quite the contrary, I assure you. I have kept poultry these many years as a business proposition and not a hobby, and given a nice cheque for £20,000, or so, I should be glad to retire from business and have a rest. In this matter of selling eggs, however, I have always argued that, as in practically all businesses, there is a class of buyers who will always endeavour to get their goods at as low a price as possible, and who have not the slightest "sense" of paying a fair profit to the producer or manufacturer, and unless you have sufficient capital and a certain amount of keen business sense of "bluff" in your make up with which to stand up against these squeezers you are, sooner or later, bound to go down and under. The much-abused platitude "Supply and Demand" is all very well, but to this axiom the keen business man adds, "Hold when there is no demand, and sell when there is." If you cannot afford to hold them, I say again get out of it, and the quicker you do so the better for yourself and others. Throughout the country there are thousands and thousands of housekeepers buying eggs at "Squeezers'" prices during the spring which they preserve and use in winter. If it is "convenient" and profitable for them to do so, why should it not be **convenient** and **likewise profitable** for "C.E.F." to do ditto? Does "C.E.F." think that these "squeezers" will go to grass, as it were, during winter and do without eggs because they have to pay a penny or twopence a dozen more for them? Not THEY. There is an enormous Winter demand for good eggs, whether preserved or otherwise. If your preserved eggs are genuine good articles, you have only to raise your little finger and the buyers will come along at the double, and will willingly pay you a price that will amply repay you for the cost of preserving plus at least 2d. per egg in addition.

(No Mr. Baker, your presumption is a bit out. I am not such a philanthropist as to sell my preserved eggs at 2d. each.) Those winter buyers of preserved eggs at fair prices are no more philanthropical or generous than their selfsames in the spring, not a bit of it, but they find that they have to compete with others, i.e., have to comply with the demand and so toe the line as to prices.

I may mention, perhaps, that Cambridge is one of the worst egg markets in the country, so, if I and many others can get 2d. an egg, others elsewhere should be able to do likewise. What Egg Producers and practically all other Home Producers are up against is the fact that 80 per cent. of the population is an urban one, out for getting something for nothing. Said population doesn't care a Tinker's Twopenny if a thing costs 6d. to produce, it thinks it quite reasonable and right to try and force the producer to sell it at 3d., and if —like "C.E.F."—you don't find it convenient to resist their generous demands, down and under you must go.

Yours truly,
J. H. BURN-MURDOCH.

INCUBATION AND REARING.

To the Editor of "Eggs."

Dear Mr. Newman,—At the risk of being tedious and unprofitable, I venture to send you a few statistics to add to the medley of opinions and dogmas on incubating and rearing as follows:—Eggs for incubation are all 2 ozs. or over—all from birds 12 months or over—sired by birds ten months or over. No egg for incubation is kept over 10 days. While keeping, it is stored in an ordinary travelling felt-lined egg box, on end.

Breeding stock fed as follows, by weight:—Bran 2, middlings 4, S.G.O. 1, maize meal 1, fish meal 1. Between 1st October and 1st February bran is reduced to 1. Incubation by hot-air machine, with outside water tank, and wick leading up chimney. Size, 70 egg. Incubator room is a former washhouse, damp and thin walls. I endeavour to keep room temperature not lower than 45 degrees Fahr., using a small gas stove when necessary.

I run the incubator 105 degrees first four days, then 104 for a week, and finish at 103. Thermometer **bulb** about 3/16th in. above the eggs.

Hatch No. 1, 26th December-16th January, 1925 Fertile eggs hatched 80 per cent. One deforme killed. Chicks reared to six weeks, 76 per cent Died or destroyed 24 per cent. Owing to a fault lamp, temperature of this hatch actually varie from 100 degrees to 112 in the first five days.

Hatch No. 2, 5th January-25th January, 1925 Fertile eggs hatched 80 per cent. Killed (deformed) one. Chicks reared to six weeks 89 pe cent. Died and destroyed 11 per cent.

Hatch No. 3 (run in my absence with temperature 103 degrees, and room temperature often 4 degrees). Fertile eggs hatched 71 per cent Killed (deformed) 3. Chicks reared to six week 75 per cent. Died and destroyed 25 per cent.

Hatch No. 4, 28th March-17th April, 1925 Fertile eggs hatched 80 per cent. Killed (deformed) nil. Chicks reared to date 93 per cent Killed and died, 7 per cent.

All chicks are reared strictly on your formul (vide "Eggs," 7th June, 1922) with milk an water to drink, and a sprinkling of salt, bone mea and chalk in their dry mash.

They live in "Sanitary" hovers, placed singl in sheds made of asbestos cement sides, and roo on 2 x 2 scantling; top ventilated, concrete floor covered with ashes and earth, and sprinkled wit straw chaff. First week temperature 75 to 8 degrees, and then after 60 degrees. Under th hover is a standing of perforated zinc, raised o 2 in. scantling, which has ventilating holes throug it.

I have not weighed them this year, but in pas years have got them to run pretty close to the bes Wellingham experiments, from 12 to 16 ozs. a six weeks.

I have several hens that have scored 100 pe cent. in both hatchability and rearability.

My records are open to any inspection. I tra nest my birds, and pedigree hatch more as a hobb than a business.

I trust these records may be of some passin interest or helpfulness.

Yours faithfully,
L. LUSHINGTON (Brig.-Gen.).

CLITHEROE LAYING TEST.

To the Editor of "Eggs."

Dear Sir,—I notice you mentioned the above Tes in last week's "Eggs." I had a notification tha the hen I entered (No. 205) had died of roup, an I am not yet quite satisfied as to what reall happened.

I hope you will do something to throw som light on the matter. I have lost a beautiful bir and my entrance fee. If anything serious ha pened, oughtn't the test to have been abandone or competitors at least properly notified?

I am, yours faithfully,
PAUL G. ESPINASSE.

LAYING TESTS.

To the Editor of "Eggs."

Dear Sir,—I was interested to see that you had eceived letters from readers of "Eggs" re the Clitheroe Laying Test," as I, too, had birds ntered in it—one W. Leghorn and one Ancona. bout the end of the second month we had notice ıat the Ancona had died of roup, but in all subequent reports it continued to appear as having ıd no eggs. The W. Leghorn is reported to have ıd no eggs until February, though the lessdvanced sisters to these two birds had been layg satisfactorily here since the middle of October. The birds were entered in the name of W. C. othersall.

Yours faithfully,
DOROTHY HOTHERSALL.

BLOOD-TESTING PENS.

To the Editor of "Eggs."

Dear Sir,—When first the suggestion of bloodsting S.P.B.A. Registered Pens against B.W.D. ıs mentioned, I thought it would be a good ıng, as setting further higher standing for eeders to aim at, consequently a better article offer to the public, but on further consideration ım of opinion that it may cause a lot of trouble d do very considerable harm to a perfectly nest and conscientious breeder—i.e.:—

The breeder's pens and all his stock may have ssed the test, and any eggs or chicks which he pplied may be free from B.W.D. when leaving farm, but what is to prevent them becoming ected after in the thousand and one ways in ich they may do, and, if so, how is it to be ved that the infection took place prior to or er leaving the farm?

he client, on being informed by the veterinary geon that the chicks died from B.W.D. would nine cases out of ten blame the breeders, and, ıtly or wrongly, such accusation would do the eder a lot of harm.

gain, Sir—but of this I am not quite certain—t not possible that a tested pen may become cted at any time after the test was made? As ıess the case of the starling found by a poultryı in one of his houses, and sent to Major nders about three weeks ago. According to -mortem report the bird was absolutely rotten coccidiosis. Such a bird, and there must be ons of them, are terrible visitors to a poultry ı.

ould like to see other breeders' opinions on subject. It is, to my mind, one of vital imance, and has not been discussed sufficiently.

Yours faithfully,
FRED WEEKS.

A GOOD REARING.

To the Editor of "Eggs."

Dear Sir,—I thought you might be interested to read my rearing results this year. In all my experience—which runs back more than forty years—I have never known such excellent results as this season. Beginning with eggs: Out of 600 Buff Rock eggs from my best pen, consisting of a cockerel and fifteen hens, I have only had three clears. At the beginning of March I mated him with 15 White Wyandotte hens, and out of 400 eggs incubated I only had one clear egg. A curious point in regard to this last mating is the extraordinary proportion of pullets to cockerels, the former being approximately seven to one. A broody hen with fifteen eggs hatched 14 pullets and one cockerel.

Chick mortality has been exceptionally low. I have only lost two chicks in the case of the crossbreds. They have been fed strictly on your formulæ. I consider poultry farmers owe you a deep debt of gratitude for these carefully worked out rations. In spite of the tricky weather I have followed my old plan of getting the chicks out and about at the earliest possible moment, and after the first week they have had full liberty from seven o'clock in February and between five and six o'clock now.

On this rather damp, clayey soil I find nothing beats Buff Rocks for hardihood and winter production. Wishing you continued success.

Yours faithfully,
HERMANN LEA, S.P.B.A.

EGGS BY WEIGHT.

To the Editor of "Eggs."

Dear Sir,—May I refer to a "Correspondent's" letter in this week's "Eggs," the statements in which were an amazing revelation to me.

My experience does not confirm "Correspondent's" opinion that properly-graded clean eggs will sell at better prices (wholesale) than eggs of various weights. I produce, roughly, a quarter of a million eggs annually, which are all properly cleaned and graded, and, to save delay, despatched by road to market, and I receive Smithfield top prices for first-grade eggs on the day I despatch them—to-day's price, as published in the "Daily Mail" being 14s. per 120. To obtain this price even I have to include no eggs under 1⅞ozs., any under this weight being packed in separate boxes as "smalls."

Imagine my surprise when I read that a "Correspondent" gets not only the current Smithfield price of 14s., but, as I understand his letter, 2s. 6d. extra for 2oz. eggs (which, as explained later on in his letter, are all eggs between 1⅞ozs. and 2⅛ozs., or the same weight eggs as I get a bare 14s. for), and a proportionate increase for heavier eggs, culminating in 20s. 8d. for 2½ozs.! Am I waking or dreaming! *Almost* *double* the Smithfield top price for first-grade eggs! Surely there must be some mistake in "A Correspondent's" figures? If not, I beg of him to put me at once in communication with his dealer who handles upwards of three-quarters of a million eggs per week. I may mention that I estimate my eggs *average* between 2⅛oz. and 2¼oz. Your correspondent further states that he always obtains better prices than those quoted for, "Dutch all brown—18lbs.," although his eggs average only about 2⅛ozs., and a case of his specially selected 2½oz. eggs would weigh only 18½lbs. to 19lbs., and a case of Danish 18lbs. eggs would average, he thinks, a little under 2½oz. It must be remembered that for eggs of this weight your correspondent gets 20s. 8d., and it is rarely that Smithfield prices show a greater disparity in favour of Danish, than 1s. to 2s. per 120 between the top price for English new-laid, and Danish 18lbs., and if a *dealer* can give 20s. 8d for 120 eggs, or 2s. $\frac{8}{10}$d. per dozen, at what price and place are they retailed, when at the same date Smithfield top price is 14s. per 120, or 1s. 4$\frac{8}{10}$d. per dozen? These latter are not priced in any shops I have seen at a higher retail price than 1s. 9d. per dozen, and it made my mouth water to read that for his 16 cases your correspondent averaged 17s. 5d. per 120, or 1s. 9d. per dozen wholesale, at a time when I received 1s. 4$\frac{8}{10}$d. for equally heavy, clean and newly-laid eggs.

I cannot, moreover, follow your correspondent's reasoning that we must improve our marketing to beat the foreign egg. Surely that cannot be accomplished by demanding (and obtaining) a much higher price than is required for Danish! and as to a market having never been found wanting for an honest article, is it not beyond cavil that Danish eggs are as newly laid and generally as well marketed in England as the best English?

Yours faithfully,

H. D. BRUFTON.

"LEICESTER MERCURY" COUNTY LAYING TRIALS.

Officially supervised by the Leicestershire County Council—Agricultural Education (Joint) Committee, Horticultural Sub-Committee.

8th Monthly Report for the period April 20th, to May 17th, 1925.

In the report for the 8th month of the above competition Mr. W. Rolling states that there has been a slight decrease in egg production, which is the result of a natural seasonal falling off, coupled with some amount of broodiness on the part of the heavy breeds, 17 pullets of which have passed through the broody coops during this period. A total of 2,051 eggs has been laid in the four weeks, giving an average of 18.3 per bird, against 2,301 with an average of 20.6 per bird for the previous month. The total for the 8 months is now 14,845 eggs. There is little change in the positions, except that Mr. T. F. Wildman's pen of Rhode Island Reds now takes the lead over all pens, superseding Mrs. E. Ball's pen, which is now second. The best performance for the month was again made by Mr. Wildman's pen of R.I. Reds, which laid 130 eggs in the 28 days. No case of disease has occurred. but two birds have died during the month. The dead birds have been examined by the Veterinary Department of the Ministry of Agriculture, which report that the Wyandotte pullet owned by Mr. J. T. Kidger failed to show any definite lesions to account for death, and that the Black Leghorn pullet owned by Mr. Alan Kemp died from strangulation of the intestines.

Number of eggs of leading pens are given below:—

Section 1.—Division A.—Light Breeds (6 birds).—Mrs. R. Crawford (W.L.), 869 eggs; Crawford & Dowell (W.L.), 786; J. & A. Moore (B.L.), 631; Alan Kemp (B.L.), 643.

Section 1.—Division B.—Heavy Breeds (6 birds).—T. F. Willman (R.I.R.), 995 eggs; Mrs. E. Ball (R.I.R.), 915; Miss G. Bellgrove (R.I.R.), 873; Lady Dorothy Fraser (R.I.R.), 899.

Section 2.—Any Breed (2 birds).—J. T. Kidger (W.W.), 360 eggs; Geo. Gilliver (W.W.), 301; Geo. Stevens (An.), 293; Miss D. Walton (W.L.), 248.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

A PHYSIOLOGICAL IMPOSSIBILITY.

I have heard this phrase on one or two occasions
late, and have wondered a little what it meant, an
whether or no it was always justified. The first tim
I remember hearing it was some twenty years ago, i
connection with a little discussion as to the possibilit
of a pullet laying 200 eggs in a year. Now we hav
authentic records of over 300 eggs in the year, with
star performer of 343 (official). Yet when that num
ber is exceeded by some 20 eggs, or an exceptional he
puts up a wonderful score over a number of years,
is described as a "physiological impossibility." Do
it really follow that it is so? If it were not for th
exceptional individual, the race would stand still. W
don't raise the standard by breeding from the averag
quite the contrary. All this by way of preface to th
following extract from a letter received yesterday:—

> "A friend of mine has just been showing me
> copy of the 'Smallholder,' last week's, I believ
> and a writer in this issue claims he has a firs
> cross pullet (Brown Leghorn x Light Susse
> hatched February, 1924. On Wednesday last s
> had a brood of chickens, on Friday between no
> and 3 p.m. she laid five eggs, the following d
> she laid two eggs in the morning and two in t
> afternoon. and on the Monday she laid four mo
>
> What do you think of this performance?
> should very much like your opinion."

I don't think my opinion should be asked on
delicate matter like this; it places me in a very aw
ward predicament. Perhaps, however, my correspo
dent only wishes an opinion on the pullet, and r
her performance. I have not seen her, but I am su
the owner would be able to show me both the pul
and the eggs if I called, and that would convince so
people. I believe I have a record somewhere whi
easily beats this, but that was in America, and is
sworn to by affidavits before a duly credited judge (n
a poultry judge). We published a full account of
some years ago in "Eggs." That is a very wonder
pullet. What a magnificent advertisement she wo
be for somebody's spice.

COCCIDIOSIS—A MISNOMER?

Dr. Morris claims that "over-zealous bacteri
gists" gave the name to a disease that is noth
more than brooder pneumonia (American Poul
Journal). He says that "Coccidiosis is nothing m
than brooder house pneumonia, and the bugs fo
in the intestinal tract are there by reason of the c
ditions brought on by the pneumonia." This st
ment is severely criticised by Mr. Boughner, who c

Dr. Johnson, who kept groups of chicks under identical conditions, where sanitation and ventilation were rigidly controlled. Those groups fed infected material, contracted the disease in proportion to the amount of material given them. Those in the same cages that did not get the infected material did not contract the disease. Cages were provided with wire bottoms, so that the droppings were not accessible. Further criticism of Dr. Morris's article is based on this statement that "Pneumonia may be brought about by many causes. The main one, I find, causing it with our chicks is faulty ventilation. However, anything that may produce sweating with a subsequent chill may produce it." Criticism is based here on the grounds that the chicks' sweating must mean that they have sweat glands, and the doctor is asked: "Where are these sweat glands located? I don't think the doctor meant this inference to be drawn. We often speak of chicks " sweating" when we know they don't. You may see a chick panting in the hot sun, but you do not find it sweating. In a badly-ventilated or overcrowded brooder you will find it very moist, but that, of course, is due to the lack of ventilation and not sweating. I doubt what Dr. Morris has to say about Coccidiosis. Some years ago I had a very unpleasant experience of this disease. It was hardly known then, and it was some time before we knew how to treat it. Losses were very heavy, not only in the brooders, but with those hen-hatched and reared. How the chicks were infected, it is impossible to say. Wild birds and rabbits are both subject to the disease. There are plenty of both here, but it is said rabbits can't communicate it to fowls. Should we be able to stamp out this disease if we reared our chicks intensively? One can pretty definitely say that the losses would not be so heavy from this cause.

RED MITE.

With the warm weather it is well to be on the look-out for Red Mite. These parasites are not very active in the cold months, but if a house is infested with them, they will do an immense amount of mischief at this season. Birds soon fall out of condition, and, if I may say so, a goodly number of poultry-keepers are apt to forget that such things exist, although in all other respects, they may take great precautions as to cleanliness. The red mite is a blood-sucker. In general, it only infests the birds when they are on the perches, but occasionally they are found on hens in the day time, if the nest box happens to be infected. They not only cause loss of blood, but intense irritation. When engorged with blood they are red in colour, when not engorged—grey. The eggs are laid in the cracks and crevices which shelter the mites, and take about two days to hatch, according to temperature. They have been known to remain alive in a house which has not had fowls in it for five months. When a house is badly infested, it becomes necessary to spray it—a strong solution of Izal or Jeyes' Fluid is effective, care being taken to get it well into the cracks and crevices. I have found daubing the ends of the perches with creosote once a week very effective, dusting the nest boxes with a mixture of air-slaked lime, three parts, and flowers of sulphur one part is very useful. The worst case I ever remember was connected with some growing pullets. These had been furnished with empty banana cases on which to roost; the pullets were anaemic looking, their plumage ruffled, and were generally a very bad-looking lot. When the cases were knocked to pieces at my request, we found the solution of their condition. It was a curious fact that the house had been thoroughly cleaned and lime-washed, and the cases bought from a local grocer for the pullets to perch on, as it was thought they would be less likely to cause crooked breast-bone than the ordinary perch. The owner told me the pullets very quickly recovered. They were given abundance of water-cress and sulphate of iron. How the banana cases became infested with the mite I cannot say.

IMMEDIATE—VERY URGENT.

May I draw members' attention to the fact that chicks or fowls intended for post-mortem examination should be sent, not to me, but direct to Major Saunders, M.R.C.V.S , Tarring Road, Worthing.

Three parcels have reached me during the last seven days, all marked "Immediate—Very Urgent." If the senders had only taken the trouble to look at the instructions over the Answers to Queries Columns, it would have saved the delay which the fact that the parcels were marked in the way described did not prevent.

Our readers' attention is drawn to the important article on Roup, by Mr. T. W. Toovey, which appears on page 357.

OUR FRONT COVER.

Mr. R. H. Berney tells us that his White Runner Duck, "Buttercup," No. 401 in the Small Flock Section of the National Test, 1923-24, has laid 183 eggs in 183 days, from October 2nd, 1924, to 3rd April, 1925, and she is still in lay.

This is a most wonderful performance, but then her sire was bred from the celebrated "Lady Knight," who laid 363 eggs in 365 days in the New Zealand Test.

" The Duke of Wellington," sire of " Buttercup," has many famous daughters, another record being 294 eggs in eleven months, in the National Test, while his grand-daughters have scored numerous successes.

That the " Duke " is prepotent in an extraordinary degree, is very evident. That one would expect from a bird with such a long line of ancestors selected for a long period for a specific factor.

Mr. Berney has built up his strain by the careful selection of the best producers procurable. That, in itself, does not spell success.

He has also been able to secure birds which are undoubtedly prepotent so that the strain now is very firmly established on sound lines.

One often reads of " So-and-So's " strain, but it fails to carry conviction, because we know the advertiser or owner has lost sight of the individuality of the birds, and when that occurs the word " strain " counts for nothing. This is a mistake which Mr. Berney has not made.

We understand that the two teams of ducks exhibited at Wembley by Mr. Berney, have been sold to South Africa.

LAYING TESTS.

I have been looking with some interest at the records in the National Test at Bentley. The advance of the Buff Rock is very marked, and in the breed averages to date it has been first with 93.02 eggs per bird. Moreover, in the six pens competing, only one egg has been under weight, and in the leading pen (Mr. A. A. Plimpton's), with a record of 495 eggs, only 13 second-grade eggs have been laid.

There is a great future for the Buff Rock, and it seems to find new admirers every day.

It is a little disquieting to see the number of under-weight and second-grade eggs laid by the Light Sussex, and breeders will have to be careful or the variety will gain unenviable reputation in this respect. That the Sussex can lay numbers of egg, and size at the same time is evident from the pen of Mrs. Alston, which has laid 479 eggs, only two of which have been second-grade, and one underweight.

Australorp breeders are to be congratulated on the improvement made, but they have still a long way to go, and there is no doubt that much of the stuff which was imported was not of very high grade, but by careful selection they may justify themselves.

Mr. Leigh remarks upon the improvement in size of egg. Still the percentage of second-grade eggs is far too high.

Miss Cavanagh has a useful pen of Black Mendels.

Marsh Daisies are doing moderately well, but Mr. G. W. Stott's pen has only laid eight second-grade eggs.

It is pleasing to note that the report states that the death rate to date is just under 1½ per cent. After all that is something when we have heard all this outcry as to the lack of stamina in our pure breds, and of a necessity for cross-breeding.

Are R.I. Reds laying smaller eggs? I am afraid this is the case, for certainly the percentage of second-grade eggs is greater than compared with five or six years ago.

Mr. A. K. Spiers Alexander is to be congratulated in holding leading position in White Wyandottes, his pen having laid 605 eggs, of which only 97 are second-grade.

I noticed a new breed, entered by Mrs. Pallant, under the name of Suffolks. So far I have not seen any of these. The pen has laid 321 eggs, of which 124 have been first-grade, and 27 under-weight. This is not a very hopeful start.

Cuckoo Leghorns this year have not enhanced their reputation, the pen entered only having laid 177 eggs.

White Bresse have done fairly well, and there is decided improvement in the size of egg.

The one pen of Blacks entered has only done moderately well.

Black Leghorns appear rather a mixed lot. Lady Anderson has established a strong lead with 599 eggs, Mr. E. Watkins follows with 479.

In the Championship Section Mr. G. B. Metcalfe's R.I. Reds have done exceedingly well with a total of 1,121 eggs, of which only 39 were second-grade, and three under-weight.

Mr. Frank Snowden takes second place with White Leghorns. This pen has also put up an exceedingly good performance—1,034 eggs, of which only 98 are second-grade and one under-weight.

Mr. Leslie Williams leads in the White Wyandott section with 1,013 eggs.

Buff Rocks lead the whole section in breed average with 93.02 eggs per bird. White Wyandottes, 88.17 Single pen of Black Mendels competing have an average of 91, Black Leghorns 82, 81; White Leghorns 77 63. The lowest position that is taken by the single pe of Black Minorcas could hardly have done worse, with an average production of 34.80 for the six months.

Mrs. Hunter would respectfully ask all Members o the S.P.B.A. to note that, with reference to he recent appeal, the list will remain open until Wednesday, June 3rd.

APPLICATIONS FOR MEMBERSHIP.

Dunn, Miss C. M., The Agricultural College Office, Portree, Sky
Turner, W. H. G., Rivermede, Hythe End, Wraysbury, Bucks.
Rolfe, S., Cricklade Road, near Driffield, Cirencester, Glos.
Welch, J. F., Snelling P F., Moreton, Dorset.
Wright, W. O., 4, Roscoe Road, Billingham, Stockton-on-Tees.
Scott, John M., The Bungalow, Sowerby Grange, Northallerton, Yorks
Frederick, Wm., The Germonds, Welsh St. Donats, near Cowbridge, Glam., S. Wale
Edwards, R., 8, Mount Pleasant, Bristol Road, Chippenham.
Kelly, Major J. C., Belle Vue House, Stockbridge, Hants.
Carter, Capt. H., Dutton, Walton-on-Thames.
Douglas and Warren, Greenham, Crewkerne, Som.
Peirson, Capt. C. F. W., Woodgate, Beckley, Sussex.
Scott, Mrs. E. R., "Bengeo," Straight Road, Shrub End, Colcheste
Knox, John, 8, Green's Terrace, South Shields, Durham.
Crosthwaite, Capt. J. J., Kearstwick Hill, Kirby Lonsdale, Westmorelan
Walsh, Thomas, Pool House, Pool-in-Wharfedale, Yorks.
Joscelyne, Miss E., Greenlands, Weeford, near Lichfield.
Foley, James, 6, Alice Street, Oswaldtwistle, Lancs.
Bettens, John F., The Retreat, Hurst Lane, Thorpe Green, Chertsey, Surre
Buck, Miss G. M., Norwich Road, Scottow, Norwich.
Hanstock, A. H., Longfield, Newby, Scarborough.
Watson, W. J., The Valley P F., Rydal Bungalow, Christie Road, Biggin Hill, Ken
White, Mrs. L., Birchwood, Kempshott, Basingstoke.
Cave, V. C., Sidbury Manor, Sidmouth.
Johnson, E. O., "Ash Cote," Bradwell, Sheffield.
Harker, Ivan B., Hollins Close, Bolton, Bradford.
McElroy, B., Drumnaquoile, Castlewellan, Co. Down
Dean, F., Wheat-Ing P.F., Wadsworth, Hebden Bridge.
Muzio, Miss D., Bryn Corach, Conway, Carnarvonshire.
Cliffe, S., 16, Catherine Street, Brighouse, Yorks.

KEIGHLEY AND DISTRICT BRANCH.

YORKSHIRE FEDERATION INTERNATIONAL LAYING TEST HELD AT OTLEY.

End of Seventh Month.

The following are the first ten positions in Class C. fo Specials, offered to members of the Keighley and District Branc of the Scientific Poultry Breeders' Association:—

Section 9. Any Variety Light Breed.—1, W. Wharton, Keigh ley (W.L.), eggs laid 137, value £1 10s. 1d.; 2, H. Kershaw, Keig ley (W.L.), 110, £1 5s. 6d.; 3, S. Preston, Haworth (W.L.), 10 £1 5s. 5d.; 4, J. and W. Brayshaw, Cross Road, Keighley (W.L. 123, £1 5s. 4½d.; 5, Wright and Fortune, Keighley (Ex.L), 12 £1 5s. 2¼d.; 6, S. Hartley, Haworth (W.L.), 118, £1 4s. 9¼d.; 7, Atkinson, Thornton (Bf.L.), 113, £1 3s. 1½d.; 8, J. Paget, Utle (W.L.), 103, £1 3s. 1d.; 9, W. Thompson, Glen Lea, Keighle (Blk.L.), 111, £1 2s. 7¼d.; 10, F. Waddington, East Morton (W.L. 107, £1 2s. 3¼d.

Section 10. Any Variety Heavy Breed.—1, Alf. Sawyer, Cros Hills, Keighley (R.I.R.), eggs laid 135, value £1 13s. 3d.; 2, Mr Hawkesworth, Pool (W.W.), 139, £1 12s. 8½d.; 3, H. Downsbroug Bradshaw (W.W.), 142, £1 10s. 6d.; 4, J. Brown, Glusburn (R.I.R 126, £1 8s. 9¾d.; 5, Wright and Fortune, Keighley (W.W.), 11 £1 6s. 9¾d.; 6, H. Downsbrough, Bradshaw, Halifax (W.W.), 12 £1 5s. 4d.; 7, Miss Taylor, Cullingworth (W.W.), 116, £1 4s. 6½d. 8, C. Macaulay, Keighley (R.I.R.), 112, £1 2s. 10½d.; 9, J. and W Brayshaw, Cross Road, Keighley (W.W.), 105, £1 2s. 9d.; 10, To Marks, Oak Hill, Somerset (L.S.), 114, £1 2s. 4½d.

Angora Rabbit Wool Farming. V.

By THE LADY RACHEL BYNG.

SOME HINTS ON THE BEST WAY TO ENSURE A HEAVY HARVEST OF WOOL WORTH 35s. PER LB.

When wool is worth 35s. per lb., and the spinners are willing to buy all that can be grown of No .1 Grade, t behoves Angora Rabbit Farmers to do their utmost o supply this demand.

In no branch of farming can things be left to chance. Only to the farmer, who farms with his head, as well is with his hands, will the longed-for harvest be emunerative. Angora Rabbit Wool Farming is no xception to the rule.

(1) To ensure a *remunerative* Harvest of Wool the abbits must be comfortably and *warmly housed.* No adly-fitted doors and planks, which admit draughts, nd, if outside, rain or snow.

(2) *All floors of hutches must be kept clean.* Now his need not involve a great amount of labour. The nethodical farmer (and no farm can pay without nethod) will be always observant. Though once a veek, or fortnight, will probably suffice for the cleaning ut of the entire hutch; every now and then a hutch vill be bare of straw, or may have a specially dirty orner. It would only take a few minutes to remove he dung, or wet straw, throw a big handful of sawlust in the corner, and replenish with fresh straw.

By keeping the floor of the hutches well covered vith sawdust to absorb all dampness, and with a thick ayer of straw the wool of the Angora preserves the eautiful purity of its glistening whiteness.

The straw can be shaken up every day, allowing he dung to fall through, and thus ensure that the abbit will be sitting upon straw, and not on an ccumulation of dirt.

This shaking up of the straw would be done when eeding the daily hay, and may postpone the entire leaning for many days.

A few minutes' tidying to-day will save one hour's leaning to-morrow.

(3) One of the very best feeds for promoting the rowth of the sparkling silvery white wool so much ppreciated by the spinners, is MILK.

The best milk of all is goat's milk. It is not unsual for young stock brought up on goat's milk to eigh between seven and nine pounds at ten months age.

Failing goat's milk, skimmed cow's milk, made warm ith boiling water, is excellent. With it should be d crusts of bread.

When fed to tiny babies, just weaned, only sufficient antity should be given that can be finished at once. ittle and often is the best policy for the feeding of ung stock.

They have a disconcerting way of sitting in the ilk dish when they have had enough, and diarrhoea ould certainly ensue if any but clean milk were unk.

If neither cow's milk nor goat's milk can be procured, some excellent preserved milks are now on the market, which the rabbits relish, as they like the sweetness of these preserved milk powders.

Besides the wonderful feeding value of bread and milk it adds a wonderful lustre and purity to the whiteness of the wool.

(4) To ensure the best harvest, farmers must see that the babies up to three months of age put on at least four ounces weekly. At a month old they should weigh one pound, and they should increase one pound till they are six pounds in weight at six months of age.

(5) Babies usually have their first moult at six weeks old.

They should be either plucked or clipped at that age. Then they must be well fed for the next six weeks.

At three months old they have their second moult, and again the wool must be plucked or clipped.

Another three months of careful feeding, and at six months the third moult takes place, and the third plucking or clipping.

This is an important harvesting. According to whether the rabbit has been carefully and judiciously nourished will depend the amount of the wool it yields, and it is at this third harvesting that the rabbit's annual yield can be pretty surely gauged.

Young stock that have been insufficiently fed will not moult at the proper time, and sometimes in these cases the farmer has to wait till the fifth or sixth harvesting before the animal yields its normal quarterly amount of wool. A great waste of time and money.

(6) The methodical farmer realises time is money, and must always be on the look-out for labour-saving and time-saving methods. He must always be careful to see that no food is *wasted*—(*a*) By feeding too much food which is left by the rabbit. (*b*) By having rat and mouse-proof bins in which to store grain, meal, etc. (*c*) He must ascertain that the food he buys is of the best quality—for this is the truest economy.

The Lady Rachel Byng will be delighted to answer any questions if stamped-addressed envelope is enclosed.

"DAILY MAIL" EGG-LAYING TEST OF FIRST-CROSS PULLETS, 1924-25.

Report for Seventh Month—4th April to 1st May, 1925.

As was to be expected, broodiness became much more prevalent during the 7th month, but egg production showed only a slight reduction. The tally of eggs amounted to 14,558 or 20.86 eggs per bird—these figures compare with 14,937 and 21.34 respectively for the previous month.

The number of broodies treated during the month was 125, as against 54 last month—3 to 4 days' confinement to the broody coop was usually found quite sufficient to break the desire to sit.

The general health of the flock continues to be very good.

EGG PRODUCTION OF LEADING PENS (7 Pullets).

Figures are total eggs and points to date respectively:—

Section 1.—White Leghorns X White Wyandottes.—Barley, F. W., Headley Heath, King's Norton, 1023, 1001; Abbott, J. M., Hoebridge, Old Woking, 911, 896; Sutton & Sons, Little Hoole, near Preston, 902, 891; Crabtree, Walter, Twiston, near Clitheroe, 853, 843; Barley, H. D., King's Norton, Birmingham, 1028, 834

Section 2.—Black Leghorns X Rhode Island Reds.—Ashworth, J., Whithnell, near Chorley, 920, 878; Beattie, Wilson, Rothersthorpe, Northants, 845, 840; Robinson, M. E. & A., Kingswood, Bawtry, 882, 839; Berry, P. K., Weston-by-Welland, Harboro', 901, 837; Metcalfe, G. B., Claydon Farm, Lechdale, 873, 782.

Section 3.—Any Other First Cross.—Crabtree, Mrs. W., Twiston, near Clitheroe, 930, 907; Barley, H. D., King's Norton, Birmingham, 947, 894; Crabtree, W., Twiston, near Clitheroe, 901, 879; Cross-in-Hand, Sussex (Watkins, Edward), 857, 846; Martin, Frank, Culdrose, Helston, 819, 781.

Section 4.—Any Cross Showing Sex-Linked Inheritance.—Sowerby, Hugh, Caistor, Lincs., 952, 923; White P. E., Market Drayton, Salop, 921, 793; Mansell, A., Kingston Stert, near Thame, 892, 770; Hall, R., Charles, Coulsdon, Surrey, 769, 736; Thorpe, E. J., & Correll E., Hallow Farm, near Worcester, 847, 735.

POST-MORTEMS.

J. H. The two chicks arrived alive, and showing symptoms of leg-weakness, walking on their "elbows," but able to stand for short intervals. The post-mortem examination showed the cause to be rickets, otherwise they were quite healthy. Want of available lime salts in the food, or lack of ability to make use of them for the process of bone formation, are the fundamental causes of this deficiency disease, but this inability seems, in the light of present knowledge, to be dependent on vitamine deficiency and lack of sunlight. I should advise continuing the cod liver oil in the mash, with the addition to each pound of it of half-ounce of the following mixture: Six parts bone meal, two parts of common salt, two parts of finely ground oyster shell or limestone dust, Plenty of green food, preferably cabbage, finely chopped but fed raw, should also be provided, and exercise in the unfiltered daylight be encouraged.

E. Fatty degeneration of the liver and kidneys was the cause, and there was a large mass of fat in the abdominal cavity. I should advise handling the birds to discover their condition, and those that are found to have their abdomens full and hard should be on a special regime. Do not feed maize, but give a small grain ration in the morning, scattering well in the litter to enforce exercise. They should have a soft mash late in the day, and be provided with plenty of green stuff. For these birds also I should advise the substitution of meat for fish meal, the latter containing too much oil for birds in their condition, and promoting the tendency to fat formation.

A. A. B. The post-mortem examination of the R.I.R. pullet revealed no signs of disease whatever, in fact every organ was particularly healthy, and apart from the thinness she was normal in every way. The digestion was good, and I am at a loss to account for her condition, unless she is not getting her share of the food. I should advise placing birds in the same condition together, and adding some cod-liver oil to the mash, and a teaspoonful of the following mixture for every twelve birds—two ounces each of powdered Nux Vomic, gentian and ginger.

W. C. G. The post-mortem findings in the three birds submitted for examination were as follows:—The Ancona, much emaciated and heavily infested with round worms, and affected with great irritation of the bowels in consequence. In No. 2 the conditions were the same, but not quite so thin. No. 3 was also heavily infested with worms, and was, in addition, the subject of gout, the kidneys being much enlarged and blocked with urates. The effects that worms have on the constitution vary very considerably with the individual, some birds being very heavily infested without apparent inconvenience, others show progressive wasting leg-weakness, and reflex nervous symptoms, such as giddiness, staggering gait, fits and convulsions. Internal parasites of this class produce their baneful effects by both irritating the intestines, and so interfering with the digestive processes, and by the effete matters of thei metabolism, which, when absorbed, act as toxins t their host. After a preliminary purge of Epsom salts, the vermicide should be given on an empty crop, the birds being treated either en masse or individual, as circumstances permit. One teaspoonful of powdered pomegranate root may be mixed in the mash fo fifty birds, or a dram of oil of Chenopodium in that for a dozen. For individual treatment capsules containing oil of Chenopodium three minins, oil of turpentine one minin, castor oil ten minins. are quite effective.

D. and F. The hen was affected with Amyloid degeneration of the liver and dropsy. This trouble is generally attributed to dietetic errors, but there must be some individual idiosyncrasy and unknown facto at work, as the disease cannot be induced experimentally. I should advise a reduction in the fish mea portion of the ration, as the birds will be getting more natural animal food than in the winter months, which will unbalance the ration. There is no treatment fo these degenerations, but a carefully balanced ration free from indigestible constituents may do much t reduce the number of cases.

A. E. L. The post-mortem examination of the pullet showed the cause to be Asthenia. This disease is due to a small bacillus of the colon family that produces a muco-enteritis of the small intestines resultin in a gradual wasting away and great prostration. Th trouble does not appear to be infectious from bird t bird; experimental infection fail, although many case may occur at the same time or follow each other. Th treatment consists in a preliminary purge of castor oi to clear away mucous, and limit the number o bacteria, followed by internal antiseptics. such as 1 grains of sulpho-carbolate of zinc in each gallon o the drinking water.

E. W. B The disease that is carrying off you birds is Fowl Typhoid, an infectious trouble caused b bacteria. Sick birds should be isolated, and the whol flock given 15 grains of sulpho-carbolate of zinc i each gallon of their drinking water as a possible preventive or cure. Treatment is none too satisfactory but is worth a trial. The premises should be ver thoroughly disinfected before fresh birds occupy them

ROUP—Continued.

duced me to a specialist, who, he stated, had completely clear his farm of the curse. This farm is now in the hands of th gentleman. Whether he will succeed in his undertaking to cle me I cannot yet say. The cases are still as numerous or mo so than ever, but the cases are milder and succumb more easi to treatment. The remedies are sure, but he has one that ac on the growths in the mouth very effectually, and renders the removal very easy, compared with the difficulty this was befor All I can say is that if he is successful he will have found o something of such a value to the Poultry Industry that it ca not be estimated. The scientists, both here and in Americ appear to know little or anything more about Roup than w known when Lewis Wright wrote his admirable book on Poult 25 years ago. The ultimate results I will, by permission of t Editor, communicate to the public, as it seems to me desirab that all should be known, especially as the hygienic metho taken on this farm to preserve health were more complete th is usually the case.

HE YORKSHIRE FEDERATION OF POULTRY SOCIETIES' INTERNATIONAL LAYING TEST, 1924-1925.

Report for the Seventh Month—April 4th to May 1st, 1925.

The Management has pleasure in announcing an important velopment in the work of the Test. For the remainder of the rent year the Test will be carried on in conjunction with the Daily Dispatch," which, in the interests of the poultry-keepers ongst its readers, is increasing the scope of the Test, and ing its work greater publicity through a regular weekly port, and the position of the leading pens.

The "Daily Dispatch" has offered a Gold Cup (with silver plica) to be competed for annually. The conditions under ich the trophy will be awarded are not yet settled, but it is ended that it shall mark the supreme performance of the st. It is hoped that this collaboration may continue in the ure and lead to considerable development in the succeeding ar's Tests, but no definite announcement can yet be made. anwhile there is no alteration in the management or work- of the Test, beyond the additional scoring necessary for the ekly reports which will be published in the "Daily Dispatch," t will not be issued to competitors.

Egg production has reached the high level of 21.28 eggs per ds this month, three birds having laid every day, and 30 more her 27 or 26 eggs each. Pen No. 3 (Will Barron's) has laid 26, 24, 24, 27 eggs, the highest performance of the month, the ight also being very good. There is no change in the positions the leading pens and birds. A printer's error reported Bird 495 dead, and this so incensed her that she immediately started lay.

Hon. Secretary: Mrs. VOWLES, Beningbrough, York

The leading pens to date, with their records and positions as follows:—

Class A. Section 1. White Leghorns.—Mrs. Clay, Long Pres- n, 703 eggs; R. H. Fryers, Bradley, Keighley, 662; R. Rodwell, lson, 624.

Class A. Section 2. Black Leghorns.—R. Rodwell, Nelson, ; A. White, Malpas, Cheshire, 568; Mrs. Clay, Long Preston, 545.

Class A. Section 4. White Wyandottes.—Dr. J. E. Helm, New- urch, in Rossendale, 635; Mrs. Clay, Long Preston, 566; A. owdon, Pool, Leeds, 631.

Class A. Section 5. Rhode Island Reds.—Sutton and Son, tle Hoole, Preston, 586; M. A. Hindmarsh, Skelton, York, ; T. Gardner, Garstang, 509.

Class A. Section 6. Any Other Variety (Heavy).—Davey and n, Sutton, Keighley (L.S.), 644; Wright and Fortune, Keighley . R.), 551; W Hamnett, Blackpool (Bf. R.), 502.

Class C. Section 9. Any Variety Light Breed. Single Bird ction.—Wm. Wharton, Keighley (WL.), 137; Mrs. E. Kaye, Poole, eds (W.L.), 134; R. and A. Johnson, Chalford, Glos. (W.L.), 130.

Class C. Section 10. Any Variety Heavy Breed. Single Bird ction.—M. E. and A. Robinson, Bawtry (Lt. Sx.), 169; Alf. wyer, Crosshills, Keighley (R.I.R.), 135; Mrs. Hawkesworth, Pool .W.), 139.

THE SCOTTISH LAYING TEST.

The report of the seventh period of four weeks, which was mpleted on the 28th April, states that the weather was of a ried character. Wintry conditions revived on the first, the ound being covered with snow to a depth of seven inches, and hough there were hours of sunshine recorded, the biting nds were experienced, which did not promote egg production. e health of the birds is satisfactory. With the sitting breeds ere was an increase in broodiness. The average production s well maintained, the total number of eggs being 8,037, an erage per bird of 20.45 eggs, and the average per bird since e beginning of the test being 106.32.

One is concerned to see the high percentage of underweight gs laid, and to note that these are confined almost entirely to hite Leghorns, White Wyandottes, and R.I. Reds. Nor does it pear to follow that the pens which laid the greater number these under-weight eggs were necessarily the most prolific.

White Leghorns showed the highest average per bird to date, e average being 114.24. Buff Rocks did well with 111.07, but e just beaten by White Wyandottes 111.41.

It is notable, however, that the Buff Rocks have not laid any cond-grade eggs

Only one pen of Barnevelders is entered, but they are doing irly well.

Ducks have proved unsatisfactory. The average of 82.16 per rd being very poor, considering the excellent accommodation ich we saw on our visit to Edinburgh last December.

Egg Production of Leading Pens at end of Seventh Period... 28th April, 1925.

Figures are Eggs and Points respectively.

Section 1. White Leghorns.—J. Prentice, Uddingston, 772, 748; Baxter, Lanark, 705, 704; J. W. Dobbie, Rothesay, 772, 694.

Section 2. White Wyandottes.—R. A Oliver, Boarhills, Fife, , 711; S. E. S. Burnett, Colliston, Arbroath, 604, 602.

Section 3. Rhode Island Reds.—Mrs. Logan, West Kilbride, , 746; H. P. Roche. Stevenston, 717, 715.

Section 4. Non-Sitters other than White Leghorns.—A. Wat- n, West Linton, 638, 636; R Scott Miller, Uddingston, 633, 633.

Section 5. Sitters other than in Sections 2 and 3.—J. Adams, eland, Lamarkshire, 712, 712; O. C. Brown, Scunthorpe, Lincs., , 586.

Section 6. Ducks.—H. S. Godsmark, Ashford, Kent, 804, 759; A. and A. M. Johnson, Chalford, Stroud, 686, 586.

Roup.

By T. W. TOOVEY.

As I have written much in the past in an optimistic spirit as to the future of Commercial Poultry Farming, by which I mean the production of table eggs and table poultry only, it appears to me that it is all the more incumbent on me now, in the light of recent experience, to communicate to the Poultry Industry what I am experiencing. I still believe that Commercial Poultry Farming is, if all goes well, a very pleasant and easy way of earning a comfortable living, but I am much afraid I must reconsider the whole matter when it comes to being a question of "Safety First."

This farm has now been in existence for twenty-six years, and, although for years it was uphill work, solving the problems connected necessarily with a new and unknown industry, yet never during the whole of its being have I felt so apprehensive of its future as I do at the present time. Because I have possibly by my book and other writings encouraged others to sink their capital in this business, and also especially because I realise that others for their own sakes must hesitate about making public similar experiences, I am writing this account of probably one of the worst misfortunes that could happen to anyone interested in a large way in farming poultry.

When we took stock on 31st December, 1924, we had 7,500 laying hens and 500 ducks; out of these there were only nine birds in hospital, and I think never did the outlook appear more promising. The farm was complete and everything rounded off and finished. During the last few years since I gave up side issues, I could have budgeted with close exactitude, both as to costs and profits, for the coming year, each January 1st. The whole outlook is now altered, the losses must run into many hundreds of pounds, and if the farm as an industrial undertaking is doomed, then the capital losses will amount to thousands.

The cause can be all summed up in the one word "ROUP." It is curious this should be so, because if any set of poultrymen should be familiar with roup it is myself and my poultrymen. I doubt if the farm has ever been entirely free of roup since the second year of its existence, certainly not for the last twelve years; but the cases were mild, and, although a birds might die now and then from a diphtheretic growth before it was discovered, the great majority of the cases were cured by the well-known simple remedies, such as sulphate of copper or iron, and permanganate of potash.

About the end of January it was reported to me that the number of cases of roup were above the normal. At first I was not disturbed about this, as I had heard this before, and simply asked my people to persevere with the usual treatment, segregating the cases in the hospital, as was the custom. Soon, however, I realised that we were up against something I had never seen or experienced before, and which an old poultryman, who has spent 40 years amongst poultry, had also never seen. The existing small outdoor hospitals were soon overcrowded, and two large indoor hospitals were rapidly constructed capable of holding some 500 birds, but slowly, but insidiously, and most surely, the disease spread from flock to flock. The usual growths in the mouth and throat were accompanied with scabs and pustules on the combs, face and eyes Many of the birds suffered from high fever, and if they recovered the skin peeled. The mortality increased week by week from 17 in the week ending February 7th, up to 209 in the week ending May 9th. Altogether since January 1st I have lost 1,600 head to May 23rd.

I naturally took all the advice I could get, both professional and otherwise, but no one up to three weeks ago could help me. The whole of the flocks must have been saturated with sulphur and sulphate of copper and iron. I also, with the help of some manufacturing chemists, compounded a formula of mineral tonic salts for use in the water, and I think the latter did help a little in staying the spread of the disease. These and iodine were the best remedies we used, but still they were of no real avail. About a month ago accidentally I got in communication with a small poultry farmer who had lost all his early pullets through roup, and a considerable proportion of his adult stock as well. When he learnt the condition I was in, he very kindly intro-

Concluded at Foot of Column on Page 356.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING FRIDAY, MAY 22nd, 1925.

GRAIN AND FEEDING STUFFS.—The supplies of English wheat on offer sell at recent prices, the average quotation for milling samples being 13s 1d. per cwt. as compared with 11s. 4d. at this time last year. Imported wheat generally realises rather more money, while No. 1 Manitoba has advanced 3d. and 5d. per cwt. at London and Bristol respectively, and now averages 16s. per cwt. British feeding barley is unchanged in price, and imported grinding descriptions mostly make about recent quotations. Home-grown oats are scarce and late rates are maintained, while white have again advanced at London and Hull. Imported oats generally record little alteration in value, but at London most descriptions are slightly easier on the week. Maize is in fair demand and dearer at Hull and Liverpool, but at other centres prices are unaltered.

Bran and coarse middlings are in quiet request and cheaper, bran now averaging £7 14s. and coarse middlings £8 9s. per ton. Meals mostly make recent prices, but maize products are firm, and at Liverpool and Hull maize meal has advanced 2s. 6d. and 5s. per ton respectively. Only a small trade is passing for oilcakes, but, with stocks on the low side and the high price of seed, linseed cake is slightly dearer at Liverpool, while at London prices are from 5s. to 7s. 6d. per ton higher on the week.

MILLERS' OFFALS.—Bran (British): Bristol, £8 5s; Hull, £7 12s; Liverpool, £7 15s; London, £7 5s. Broad Bran: Bristol, £9 10s; Hull, £9 2s; London, £8 17s. Middlings—Fine (Imported): London, £9 12s. Coarse (British): Bristol, £9; Hull, £8 10s; Liverpool, £8 5s; London, £8. Pollards (Imported): Bristol, £7 15s; Hull, £7 5s; Liverpool, £6 17s; London, £7 10s. Rice Bran: Liverpool, £7 5s. MEAL.—Barley Meal: Bristol, £12; Hull, £11 8s; London, £12 5s. Maize Meal: Bristol, £12 5s; Hull, £11 15s; Liverpool, £11 5s; London, £11. Maize Meal (S. African): Bristol, £11; Hull, £10; Liverpool, £9 17s. Maize Germ Meal: Bristol, £11 5s; Hull, £10; London, £9 10s. Maize Gluten Feed: London, £10 10s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 15s; Liverpool, £9 12s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 18s; London, £13. Fish Meal: Bristol, £20 10s; Hull, £20; Liverpool, £18; London, £19 10s.

EGGS AND DEAD POULTRY.

Quotations for British eggs have been steady over the week, and the best classes of imported eggs meet a ready trade at about last week's prices, but the cheaper descriptions are plentiful and sell slowly at much less money than a week ago. Little change is reported in the trade and prices for dead poultry.

Week-end Prices—Eggs (per 120): British, 13s 9d, 12s 6d; Irish, 13s 6d, 13s 0d; Danish, 14s 6d, 13s 9d; Dutch, 14s 0d, 13s 6d; French, 14s 6d, 13s 6d; Styrian, 10s 6d, 10s 0d; Italian, 13s 3d, 11s 9d; Egyptian, 8s 6d, 8s 0d; Lithuanian, 12s 0d, 11s 0d; Polish, 9s 6d, 8s 9d: Russian, 10s 0d, 9s 6d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 6d; Irish, 1s 8d, 1s 2d: Others, 1s 9d, 1s 4d. Ducks 1s 10d, 1s 4d. Geese, 1s 2d, 1s 0d.

EGGS.

Per Doz.—Ashford: First, 1s 4d; Second, 1s 3d. Birmingham: First, 1s 3½d; Second, 1s 3d. Bridgwater: First, 1s 5d; Second, 1s 3½d. Chelmsford: First, 1s 4¾d; Second, 1s 3d. Colchester: First, 1s 4d; Second, 1s 2½d. Doncaster: First, 1s 6d. Dorchester: First, 1s 2½d; Second, 1s 2d. Exeter: First, 1s 3d. Hereford: First, 1s 1d. King's Lynn: First, 1s 5d; Second, 1s 4d. Llandilo: First, 1s 2d; Second, 1s 1d. Mold: First, 1s 2d; Second, 1s 0d. Newport (Mon.): First, 1s 3d; Second, 1s 2d. Norwich: First, 1s 6d; Second, 1s. 4d. Oswestry: First, 1s 2d; Second, 1s 1d. Penzance: First, 1s 2d; Second, 1s 1d. St. Ives (Hunts): First, 1s 4½d; Second, 1s 3d. Saffron Walden: First, 1s 4d; Second, 1s 2½d. Salisbury: First, 1s 3d; Second, 1s 2½d. Skipton: First, 1s 4d. Truro: First, 1s 1d. *Carlisle: First, 1s 4d. *Derby: First, 1s 4d. *Ipswich: First, 1s 6d; Second, 1s 3d. *Lincoln: First, 1s 4d. *Shrewsbury: First, 1s 3d; Second, 1s 2d. *York: First, 1s 5d; Second, 1s 4d.

FOWLS.

Per lb.—Birmingham: First, 1s 8d; Second, 10d. Doncaster: First, †5s 0d: Second, †4s 0d. Exeter: First, 1s 8d. Hereford: First, 1s 8d. Newport (Mon.): First, 1s 9d; Second, 1s 4d. *Derby: First, †5s 6d; Second, †4s 0d. *Ipswich: First, 1s 10d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 1s 4d. Truro: First, 1s 1d.

DUCKS.

Per lb.—Exeter: First, 1s 8d.

* At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, May 27th, 1925.

CONTENTS.

EDITORIAL ... ...
LANCS. FEDERATION OF U.P.S. LAYING COMPETITION ... ...
DIPHTHERIA IN POULTRY ... ...
ANSWERS TO QUERIES ... ...
EAST ANGLIAN EGG-LAYING TEST ... ...
GLAMORGAN COUNTY EGG-LAYING TRIALS ...
POULTRY FOODS ... ...
CORRESPONDENCE ... ...
S.P.B.A. ... ...
ANGORA RABBIT WOOL FARMING ... ...
"DAILY MAIL" EGG-LAYING TEST ... ...
POST-MORTEMS ... ...
YORKS. FEDERATION INTERNATIONAL LAYING TEST ... ...
ROUP ... ...
SCOTTISH LAYING TEST ... ...
MARKET REPORT ... ...

Contributions.—The Editor will always be pleased to consi contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existe of "Eggs" to the poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Stre London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first pa of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it imperative that new advertisements and alterations are receiv by FIRST POST ON FRIDAY MORNING to ensure insertion in t following Wednesday's issue. It is hardly necessary to add th the earlier in the week we receive copy the better it is for eve one concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON TH MONDAY PREVIOUS TO THE FOLLOWIN WEDNESDAY WEEK'S ISSUE.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, JUNE 3rd, 1925.

Editorial.

ROUP.

In last week's issue we published an article by r. T. W. Toovey, in which he described the serious sses he had sustained through an outbreak of oup, of a most virulent type, on his farm.

His many friends will sincerely sympathise with m. Apart from the financial loss, which is rious enough, Mr. Toovey loved his birds; he s devoted years of careful thought and attention the development of his farm—no one in the dustry has been so ready to profit by experience d to adopt any improvements which the years experience have suggested to him.

We can then understand the note of pessimism ich he strikes in the opening paragraphs of his ticle. It is the realisation of the utter helpless-ss in the face of such an outbreak as this; a alisation that all the research work, both here d in America, has so far only been able to assist to the extent of discovering that the disease is e to a "filterable virus," and the professional pert is not able to advise remedies, other than ose employed by his great-grandfather. This a plain statement of facts, and is not written a spirit of carping criticism. That success has far not attended the efforts of the research rker, should not cause us to deprecate the value the work any more than it should in the case of ose who are engaged in investigating human ills.

To us the outbreak on Mr. Toovey's farm must regarded as very serious from another point of w. In the first place, Mr. Toovey has never d for heavy production, holding—and we are to ne extent in agreement with him—that the eding for heavy egg production has been in a at measure responsible for the low resistant ver of much of our poultry stock to disease. In second, the birds have never been forced for production. In the wet mash always used a y high percentage of cooked vegetables has been orporated. Thirdly, the present type of house been in use for some years, and, although, as Toovey states, roup has always been more or present, it has never caused anxiety, and has erally been of a mild form, yielding to the mon remedies usually employed.

n addition to this, there is no question of in-eding, for, as is well known to our readers, Mr. Toovey's stock, with the exception of the breeders, are entirely composed of first crosses.

We dwell on these points because, in our opinion, they emphasise the seriousness of the position, and demonstrate how easily the work of years may be undone when large flocks are concerned by a single outbreak of disease. We believe we are correct in saying that Mr. Toovey runs 250-300 birds to the acre, and the only comment we have to make is that the farm is on rather low-lying ground, and so planned, that with such an outbreak, it would be almost impossible to effectually isolate any one flock, so that the disease could be under control.

It is useless to repeat here all the precautions which should be taken in the event of an outbreak; nothing useful can be added to the excellent article which we were able to publish recently by the courtesy of the Editor of "The Journal of the Ministry of Agriculture," which contains all the information on that point at present available, and also as to general treatment. At the same time it serves to show how very limited our knowledge is, and how very inadequately we are equipped to fight disease. Our experience has been that remedies which have proved effective in some cases have wholly failed in others, where there is no reason to suppose that the disease has assumed a more virulent type. What we are most concerned about is that, while we appreciate the article from the journal referred to above, it only serves to emphasise the fact that we are not in a better position to combat the disease than we were 20 or 30 years ago.

We might here once again mention the urgent importance of isolating stock birds, or birds of any kind, from other farms. No matter what the reputation of the breeder may be this should be done, and after ten days isolation the birds should be very carefully examined before they are placed with the flock. In every article which we have seen dealing with the disease which has been illustrated, it is depicted in the most advanced stage, consequently only those with experience are able to recognise it in the early stages, when only by careful examination will its presence be revealed. In the early stages the deposit is often no bigger than a pin's head, and often it will escape notice, even when the mouth is carefully examined. The general health at this stage is not affected, and the bird will continue laying, and to the superficial observer appear perfectly well.

At the Harper-Adams' Conference some three years ago, in a discussion which took place on this subject, we advocated the most drastic methods, killing and burning of affected birds. It was contended with perfect justice that while this was advisable perhaps when the outbreak was first noticed, it would be an impossible policy with a large flock, the sacrifice would be too great; while agreeing with this, we firmly believe that treatment, except in the early stages, or in very mild cases, is a mistaken policy. A bird, apparently cured and returned to the flock, is undoubtedly often the cause of another outbreak. It should not be forgotten that contagion is spread, not only through the mucus which escapes from the nostrils, from the saliva, or the secretions from the eyes, or from sneezing or coughing, but also through the excrement.

Outbreaks have been traced to birds returned from laying competitions, shows, to crates sent to markets, and which have been used by salesmen for other people's birds, to purchases from the auction markets, but the worst outbreaks which we have experienced from imported stock come from those who habitually advertise cross-bred pullets, and have generally every breed and variety of fowl under the sun on offer. It may be safely said that when an advertiser has half a dozen varieties of cross-breds, and a dozen or so pure breeds to offer, he is, with few exceptions, a dealer of the worst type. His cross-breds are mongrels, and his pure breeds wasters.

Still, the fact remains that whatever precautions are taken the most devastating outbreaks will occur, as instanced in Mr. Toovey's case. The housing problem has been discussed. However bad this may be, it is probable that the disease does not actually develop from it, or from damp or cold, although bad conditions would undoubtedly cause it to assume a more malignant form; but we feel that the proper ventilation of houses, and their construction in such a manner as will prevent extreme variations of temperature, may be of considerable assistance in the fight against disease, and we once more venture to draw attention to the extreme danger with large flocks of the area of ground immediately surrounding the house. If contagion can be spread through the excrement, we ask, what more fertile spot could be found than that immediately in front of a large laying house, where the fowls bask in the sun, and often after a heavy shower of rain, which would make conditions still worse, drink from the filthy puddles?

With due respect to all the good work which has been done by the research worker in the laboratories, we must realise that the real fight must begin and end in the field, that while the disease will always exist, our efforts must be devoted as far as possible to removing the conditions which are in the least degree favourable to its development. Efforts must be made to prevent the sale of diseased stock, and it should be realised that only by increasing the resistant power of the birds by careful breeding, feeding and housing c we hope to fight it, while those who so stron advocate the large-flock system should consider t enormous risks they run, and especially the p sibilities of infected soil.

(Continued at Foot of Next Column).

Modern Poultry Feeding.

By TOM NEWMAN.

THE NECK MOULT AND THE EARLY-HATCHE PULLET—WINTER PRODUCTION.

It is a little early to write on this subject, b I have been going to do so for some time, and I a hoping that some of my readers will do a lit experimenting on their own account and report t results to me. I have always held that the ne moult of the early-hatched pullet is due to the fa that she cannot consume sufficient food for bo production and development, the consequen being that she gets out of condition and moul To some extent the truth of this contention h been demonstrated, but I have not sufficient da to warrant my saying definitely that it is so. harm can arise from the suggestion I am going make if the birds are carefully observed, and should be noted particularly that the method feeding proposed should not be adopted until the early pullets start to lay. It is quite a sim matter, the only difference to the usual routi being that the grain feed at night, instead of bei scattered in the litter as hitherto, should be f in troughs, and the pullets allowed to consu as much as they will.

I have always and still believe that scratchi exercise is necessary, not only because it assis in the better assimilation of food, keeps the bi in health and prevents her becoming overfat, b also because it does much to prevent such vices feather plucking, egg eating, etc., which are the main caused by idleness. Sufficient scratchi exercise can, however, be given without the la feed having to be worked for, and we all kn that there is very little danger of a growing pul or laying hen being overfed. The best plan wou be to give the grain in the troughs about an ho before the birds perch. We have heard so mu about the 2 ozs. of mash and the 2 ozs. of gra per diem, and I can assure you that many poult keepers who stick to this hard and fast r seriously underfeed their birds. I would here i press upon the novice that you cannot feed su cessfully by rule of thumb, and if they were remember this fact and closely observe their bir they would get much better results.

Now as to winter production, and pullets bei slow in coming into lay. The latter compla comes from large numbers of readers regula every year. It either takes this form or they wr to say that the pullets after starting fairly w p off or lay intermittently ; in 90 cases out of this is due to under-feeding—the pullets are in a condition to lay when eggs are wanted in ober. We are all aware that when artificial t is used we get much better production of eggs ing the short winter months, and we know that is due to the additional amount of food the ls are able to consume, but we are not all able manage this artificial lighting, and where tric light is not available it entails an extra unt of work and inconvenience. I am not gesting that trough feeding of grain would lly compensate for lack of lighting, but it ld to some extent, as it would ensure the birds ng the long winter nights with a packed crop, ch they do not always do when the grain is tered and limited to one handful per bird. A ng pullet should be given as much as she will as the last feed during the short winter days ; he summer this is of not the same importance obvious reasons. When the grain is trough it should not be measured to the birds; they ld be allowed to consume as much as they It would not answer to follow this policy hens, as they would possibly become overfat, it would be a mistake to do so with birds h have just come through the moult and not ted laying. If I can persuade the Council of S.P.B.A. to do so, this would make a very esting experiment with the Wellingham inive pullets, which are early hatched and will ably start laying towards the end of July.

THE ECONOMY OF MILK.

e have long ago proved the value of milk as d for chicks. Even at present high prices I ure it pays well to feed it for at least the six weeks of a chick's life. This season's ingham experiments have, however, proved it is hardly necessary to use it in such tity as we have done in the past to get good results. We must remember that there nething more desirable than even rapid growth, that is health and vigour, and in the Welling- experiments we got both, combined with rapid th. Miss Malcolm tells me that she was ished at the splendid feathering of the chicks, it was excellent that they should be able to ithout artificial heat at five weeks old, which could not have done had they not feathered I doubt whether milk has anything like the value to the growing chick after eight weeks and in my opinion, after that age it is waste- o feed it ; but it certainly has a wonderful on hatchability of eggs, and you get bigger ar more vigorous chicks. In any case we can 5 per cent. milk for the first six weeks, and act that we have been able to find suitable ination of protein and mineral salts to allow use this minimum quantity is so much gained. at I fear so many beginners fail to under- is the necessity of keeping the chick growing. The effect of under-feeding during the developing period not only means that maturity is retarded, but that the production of eggs during the pullet year is considerably smaller, and, moreover, the size is smaller. The time in which so many people let things go is during July and August, and at this period the chicks wants to be well nourished. There are many things which may so affect its appetite as to prejudice its future career; particularly is it necessary to refer to lack of shelter from the broiling sun. There are many farms and plants which I visit where one can see the young growing stock panting through the hottest hours of the day, without the least bit of shelter ; even the houses in many cases afford no protection, and few people realise the mischief which is done. I get letters saying the chicks are hanging fire, and asking what changes can be made in the feeding. The feeding will be all right as a rule, but there is not enough consumed, because the appetite is poor owing to the intense heat. It is not very difficult to provide the necessary shelter, and it will amply repay the trouble.

BRITISH POULTRY INDUSTRY EXHIBIT—WEMBLEY, 1925.

Four separate Competitions for Dead Poultry on June 16th, 17th, 18th, 19th.

DIVISION 1.

White Skinned but not necessarily white legged of any pure breed or cross.

	lbs.
Class 1.—Pair of birds, the pair not exceeding	6
Class 2.—Pair of birds, the pair not exceeding	9
Class 3.—Pair of birds, the pair not exceeding	12

DIVISION 2.

Yellow or-cream skin, any colour leg, any pure breed or cross.

	lbs.
Class 4.—Pair of birds, the pair not exceeding	6
Class 5.—Pair of birds, the pair not exceeding	9
Class 6.—Pair of birds, the pair not exceeding	12

Entries for each Division, and all classes **close one week** prior to each competition.

For competition on June 16th, entries close June 9th.
For competition on June 17th, entries close June 10th.
For competition on June 18th, entries close June 11th.
For competition on June 19th, entries close June 12th.

Entry fee 2s. for each pair in any class. The classes are open to all. Application to be made to the Hon. Secretary, B.P.I.E., 3, Vincent Square, Westminster, S.W. 1.

AWARDS AND MEDALS.

The Poultry Club.—Bronze medals for all classes for each separate day.

The N.U.P.S.—Silver spoon for best exhibit each day.

The British Poultry Industry Committee.—Special money prizes of 40s., 30s., 20s., to exhibitors aggregating the most points on total number of exhibits throughout the four days.

The birds may be priced by the exhibitors, but any not sold in the evening will be sent to market and the amount remitted to the exhibitor. All birds should be sent plucked, tied down, but not drawn.

Whiting Farm, Roman Road, Guston, nr. Dover.
22nd May, 1925.

Dear Sir,—Without any doubt your paper "Eggs" is unique and in every way a road to make Poultry farming a success.

Yours faithfully,
(Signed) G. F. H. PRICE.

The Chinchilla Rabbit for Fur.

By H. J. GARDNER.

The Chinchilla rabbit first made its appearance in this country about 1919, from France. I understand it was first produced from a tame doe and a wild buck, later Black-and-Tan was used.

It at once became very popular, both on the show bench and for its fur, which is a lovely blend of greys, slate blue, white and black.

The enthusiasm with which this little animal was received in this country induced some prominent fanciers to form a Club to protect its interests; this is called the National Chinchilla Rabbit Club.

The Club's standard reads :—

Colour.—To imitate real Chinchilla fur, the under-colour to be slate-blue at base, intermediate portion pearl-grey, merging into white and slightly tipped with black, the whole of the body fur from nape to flanks interspersed with longer hairs of jet black, both even and wavy ticking admissible; neck fur very much lighter in colour than body, but this is strictly confined to the nape; the flanks and chest to be ticked of a uniform shade of pearl-grey, but of a slightly lighter shade than the body; the eye circles to be light pearl-grey, distinct and well defined; the under parts of the body to be white, with under-colour slate-blue; the tail to be ticked and slightly darker than body on upper side, white on under side, and the whole carried in a straight line with the body	30
Texture and Density of Fur.—Exquisitely soft, fine and dense, not a "flying coat"; length of fur to be not less than one inch	25
Condition.—Firm in flesh, bright coat, bright eyes ...	10
Shape.—Neat and cobby in type, fine in bone, free from dewlap	10
Ears.—Small and erect, evenly ticked and to match the body in colour, with upper part laced with jet black ...	5
Head.—Medium size, free from coarseness, well carried on short neck, and to match the body in colour	5
Feet and Legs.—To be straight, fine in bone, the upper part of the feet and the outsides of the legs to be ticked of a uniform shade of grey and to match the flanks and chest. The insides of the feet and legs to be white with a blue under-colour	5
Eyes.—Large, bold, with alert expression, rich dark brown in colour, with black pupils	5
Weight.—5½ lbs. to 6½ lbs.	5
	100

Disqualifications.—White patches on body.

Faults.—To lose 5 points each—Odd coloured eyes, eyes not brown, barred feet, dewlap.

To lose 10 points each—Drooping or lopping ears, white patches on feet or head, putty nose.

Since the start of the club a great improvement has been made in the texture, which is now lovely and soft, like silk. It is my opinion that the popularity of the Chinchilla is due to the scarcity of natural grey fur, and also because it is very difficult for the furrier to fake it in any way (as a large number of furriers are doing), for this spoils the beauty of the fur.

One advantage the Chinchilla rabbit has over other rabbits is that furriers will purchase p of three sizes. First, the full adult coat at fr 6 to 8 months; these first grade specimens alw find a ready market at good prices from 15s. ea even up to 21s. has been paid for good ones. T there is an intermediate coat taken from the rab at about 10 weeks; this is about 10 in. by 5 and should reach 8s. to 10s. each. Also there the clear back baby pelt taken at from 5 t weeks, when the baby leaves the mother; th must be quite clear, free from brown, and sho fetch up to 6s. each. May I say here that I kn of one farm started by me where nothing less th 15s. for adult pelts has been received. doubtedly the signs are good for Chinch breeders, for the demand is much in excess of supply.

It is absolutely necessary to obtain good st when making a start with breeding, for first gr

TWO PRIZE WINNERS.
RIGHT—1st at Reading, 1924, Wantley 1st.

pelts cannot be produced from inferior specime Unfortunately unscrupulous persons put on market animals that will never make good. Wh one considers prices given for pelts, to say noth of carcase at 10d. per lb., and then see adult st advertised for 7s. 6d. and 10s. each, stop consider before buying such.

As a hobby, I can think of no better one- combines pleasure and profit.

Whatever the size of your stock, a car pedigree should be kept, for, although there is public register as for bulls and goats, yet it is important to keep your own. I find a good p is to set out thus :—

Hutch No. or Name.	Date mating.	Buck used.	Date kindle.	No. of litter.	Rema

By keeping strictly to above much can be d to keep up the standard of your Chinchillas, it is also a great help for your own breeding know which doe and buck mated together prod the best results.

Some Fruit-Growing Notes
to help Poultry-Keepers.
By F. W. WHEELER, F.R.H.S.

Biennial Bearing. Amongst the interesting things nected with fruit growing there is one which soon ms the attention of the enthusiast, namely: The nnial cropping habit of certain apple trees. Big it growers are well acquainted with it, and the gressive ones are constantly trying to overcome it, the amateur, as well as the smaller fruit growers, become equally keen in trying to find out any- ng which can help to check this unsatisfactory it of the trees giving crops in alternate years, even n weather conditions are favourable.

t has naturally engaged the attention of our earch stations for many years, and various experi- nts are being tried in order to find a solution, but rying to tabulate results one is up against many iculties, just to name two: (1) The uncertainty f weather and its influence on whether a good crop result even when there is a splendid show of som. (2) An unexpected bad attack of blight at itical time makes the tabulating of figures for com- ason no easy matter, and I think that no satisfac- method has yet been found to prove things con- ively; nevertheless it has enabled some conclusions e drawn, one being that a certain method of winter ning is a thing that has a considerable bearing on question of checking the biennial habit, and it is d that it will be possible to devise such modifica- of pruning as will almost entirely enable the grower to eliminate this cropping in alternate s.

hen we start to observe and note down these ts of our trees we may find it is a little difficult now exactly which is the "on" or the "off" s, but taking it that the amount of fruit produced er than the amount of blossom the tree had shall onsidered as the "on" year, and also working on conclusions of the East Malling, that it is the se blossoming of a tree which has more influence the heavy fruiting, in causing the biennial bear- abit, we can then realise much better how to go ork to help to regulate by pruning. Naturally atic conditions will not allow of complete control, ve can work with nature, and by carefully observ- he things she teaches us, thus help to adjust ers.

appears from the data so far collected that the we want to do is in the winter following an year to prune harder, and to more drastically en the spurs, so as to reduce the excessive amount ssom that the biennial bearing trees will show an tion of producing in the coming spring; and in the r following an "on" year, only thin out and more lightly, and thus we should do something courage a more uniform cropping habit.

put it in another way. As it is an established n pruning work that the unpruned trees produce fruit than pruned trees, we can see more clearly how that by a system of alternate light and heavy pruning we ought to be able to help in checking the alternate years of good and bad crops. In passing, I want to qualify the above remark about "unpruned trees produce more fruit," by explaining that I mean more in numbers, and am not speaking of size and quality, for in our general pruning operations, one of our chief considerations is to obtain poultry, but for the moment I am referring to a natural habit, and want to show that if by pruning we can regulate the numbers of fruit borne by the trees in the "on" year, we do two things. (2) Give the tree a better chance to bear in its "off" year, and (*b*) help to improve the saleable quality of the fruit produced in the "on" year.

Of course, we must remember that the pruning knife is not the only factor that is going to regulate the biennial habit. Our American cousins lay great stress on the gains they have derived from the use of manures, and claim to have "forced some varieties out of the biennial bearing habit," but as is so often the case in experiments, what happens in one orchard does not always have the same results in another.

It seems reasonable to believe that correct nutrition should considerably help in the solution of the problem, and that trees kept well fed should stand a better chance of producing more regular crops, but we must watch in our experiments for effects of these manures, and note whether we are giving a too nitrogenous one, and forcing trees into making too much wood instead of aiding bud formation. Nitrate of Soda applied in the Spring of an "on" year might be beneficial, and the fruit crops would be a natural check to the nitrogenous manure, causing an excessive growth.

I think poultry-keepers will find that having plenty of nitrogenous poultry manure that they will require to supplement with Phosphates and Potash if their manuring is to help in regulating more even cropping.

I might conclude these notes by partly repeating what I said at the start, viz.: That this subject of the biennial bearing of our trees is an exceedingly interesting one, and also add that it is well worthy of our attention, for anything we can discover that will help in the solution of the problem must eventually bring us a gain, no matter whether we are those with a few trees or of those with larger orchards.

Leylands Road, Burgess Hill, Sussex.
25th May, 1925.

Dear Mr. Newman,—As a reader of your paper for several years I think it is up to me to let you know that the articles in it have been of great help to me, and I consider it of the utmost value to all those who take an interest in, and want to get a living out of poultry.

When I was in the Fressian Cattle line (by the way I bred Great Britain's first 3,000 gallon cow, Brookside, Colantha) I had to send to U.S.A. for my literature. I have no need to do this for poultry.

Yours faithfully,
(Signed) HAROLD COOKE.

Galen House, Nightingale Road, Guildford.

Dear Mr. Newman,—I have six White Leghorn hens, and have profited by the advice given in "Eggs" to a very gratifying extent.

Yours truly,
(Signed) E. M. WAIND.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

J F. (Westerton) writes that his hens have gone off laying this last four weeks, and he wants to know if the formula he is using—viz.: 12lbs. bran, 24lbs. middlings, 6lbs. maize meal, 6lbs. Sussex ground oats, 6lbs. fish meal, and 2lbs. dried yeast—is accountable for it. The dry mash hoppers are open all day, and two ounces of grain fed per bird—given one in the litter in the morning, and one in troughs in the evening. There is nothing in the formula which would account for the drop in the egg yield, but I would suggest to "J. F." that he does not limit the grain feed to two ounces, and furthermore that he gives a full two ounces at night as the last feed, and say one handful between every three birds as a scratch feed in the morning. He would be well advised to increase the kibbled maize to 50 per cent. of the grain feed. I think if he were to examine his birds he would possibly find they were a little in under-condition.

D. D. (Bankfoot) writes that she is worried with Leghorns going broody When she commenced poultry-keeping she bought sittings from an egg station, and from these obtained 35 pullets. Thirteen of the best she picked out, and mated to a cock from a firm, and only one of the resultant pullts showed signs of broodiness. Next time she bought a stock bird from a man who certainly advertises more than he breeds. From this mating she had 33 pullets, and out of these 14 have all gone broody—some of them two or three times. Surely, she says, this must be the result of the second mating. "D. D." wants to know whether she will be safe in keeping, as breeding stock, the pullets which have not gone broody, or whether she should make up a breeding pen from the hens obtained from the first mating. In answer to her question will be safe in mating up the pullets which have gone broody. There is no doubt that those which h done so inherited this tendency through the male the second mating. Possibly there has been some crossing in this strain owing to lack of stamina. M of our utility breeders resorted to that years ago, we also know that some of the Leghorns impo from Australia contained alien blood, which acco ted for their broodiness.

W. N. G. (gives no address) writes to say he two hatches of White Leghorns, one seven we old and the other three weeks. The first hatch is and progressing; with the exception of a few case leg-weakness, he has had no trouble. The sec hatch has been reduced from 159 to 66. Most of th killed. The cause of the trouble has been diagno as Coccidiosis by Major Saunders. My correspond writes that he is using a cure, and there are still chickens showing signs of the trouble. He asks i is worth the trouble and expense of rearing those can save, or would the best plan be to kill the and thoroughly disinfect the house and ground, ha out say 100 or so Light Sussex for the Christ market, and in that way make use of the house ra than have it empty until next spring. I think it been repeatedly stated in these columns that ther no cure for Coccidiosis. The only possible metho treating it which has yet been discovered is to catechu in the drinking water, killing off all affe chicks at sight, burning them, and removing the o continually to fresh gruond. There is reason in because the infection is through the excreta, and you can eliminate every chick which is a carrier of Coccidia there is danger. My correspondent wil wise to kill every sick chick at once. Those w have suffered from the disease are never worth ing. They will be stunted in growth, and will p wholly unthrifty and unprofitable. If any have immune it would be all right to keep these for production. As to his proposal, I think he would wise for the Christmas market to go in for bi birds, and I would suggest that Indian Game c erels to Light Sussex hens would be the best cros could use. If these were hatched about the en August they would answer. Failing Indian Gam would advise the Faverolle-Light Sussex cross.

F. H. C. (Malmesbury) says that this last fou five weeks his hens have been laying very thin-sh eggs, and, as a consequence, a lot have been br He wants to know a remedy to help this. The co tells him he finds nearly everyone's fowls are la thinner-shelled eggs lately, and that they gene do in the spring. My correspondent wants to kn this is general.—It is common for thin-shelled to be laid during the spring, because the birds ar more prolific at that time of the year, and do always assimilate enough shelling material; but matter usually rights itself later on when produ becomes less. There is really nothing "F. H. C." do in the matter, but take care to see that the fee is not over-stimulating. A little reduction in imal food, and the maize will be the best thing. is not a case of supplying more oyster shell.

C. K. (Shirley) writes that he has a breeding n of White Leghorns, consisting of second-ason hens, mated to a third season male, the n of the hen that laid 1,085 eggs in five and a lf years. From the above pen he has reared er 300 chicks without a single loss. The eggs ere very fertile. Would I advise keeping the ove pen for next season, reducing the number of ns with the male—he has had ten this year? ould I advise removing his comb and spurs? If , how is this done? He is out for eggs only, and s present stock has been purchased from the v. R. Runnells Moss, who has now given up. e now asks if I advise him to purchase his stock om a fresh place each year. Also, would I advise m to buy stock birds, individually bred. They e a very much higher price, and will the extra ice pay in the long run? He has been feeding a system which has given him good results til six weeks old, with great success, and he is ry loath to change, and asks if I would alter his ash if I think it needs it. His pullets are run on e range, ground specially kept. His pullets of l ages are a little pale-faced, otherwise they are good condition. Is he right in thinking they ll be a little pale-faced until they commence lay-g? Also, a lot of his cockerels' combs fall over. answer to his first question. Certainly I should ate the pen again, as the male still appears to a very vigorous one, and the results are so cellent. It would be advisable, however, at least the early part of the season, not to give him ore than six hens. Most certainly his spurs ould be removed, and I would think it advisable remove the comb also. In the former case apply hot potato to the spurs until it softens the horn, d then pare them down. With the comb, get meone to hold the bird's legs and wings for you, en with a sharp knife remove the comb, cutting om the back towards the beak. Hold the head cold water to stop the bleeding. Powder with me antiseptic powder, and keep the bird quiet d alone until the wound is healed. It is not cessary to purchase stock birds from a fresh ice every year. All that my correspondent ould do is to avoid close breeding. Certainly, he ould buy stock birds from those which are in-vidually bred, or he will very soon lose all he s gained. Agreed they are a much higher price, t they are well worth the extra money. As he s been so successful in rearing on this method I uld not advise him to change, but his remark at his pullets of all ages are a little pale-faced, d the cockerels' combs fall over, lead me to the nclusion that he is forcing them a little, or there some overcrowding. As the birds have free nge I would not give them milk now, and I would e they are not overcrowding at night.

POST-MORTEMS.

E. B. S. Both the rabbits were dead upon arrival this morning, I am sorry to say, but this after all only forestalled their demise by a short time, as the trouble from which they were suffering was too far advanced for recovery to be likely. They were both affected with Coccidiosis, caused, as you know, by an organism similar to that which causes such high mortality among birds; the organisms, however, are peculiar to their own species of host and are not interchangeable. In striking contract to the last cadaver I examined for you, the bowel contents were in a fluid state, the bowels themselves showing numerous inflamed areas throughout their length, and the livers studded with the coccidial nodules. Microscopical examination of the bowel contents and bile ducts showed the Coccidium Cuniculi, or, to give it its new name, Eimeria Cuniculi, to be literally swarming. The infection may be introduced by infected rabbits, hutches, travelling boxes, crates, etc., or at shows from infected cages. Taking advantage of the life history of the parasite, much may be done in way of prevention of infection by cleaning out the hutches at least three times a week and thoroughly disinfecting the floors by scrubbing out with hot soda water and drying off with a petrol blow torch. Newcomers—and this applies equally to rabbits that have been away from home—should be quarantined for 15 days. Adult rabbits are frequently carriers, although they may show no symptoms, and for this reason young and old should be kept separate, as the former are the most susceptible to infection. As in birds, catechu exercises a destructive influence on the Coccidia, and may be given in five to ten grain doses daily in the food or in pill form, or in the tincture form given with a teaspoon. The appetite should be tempted with a varied and sustaining diet, but fresh wet greenstuff should not be given; it should be allowed to wilt before being fed. The bodies of the dead should be cremated, and also the droppings and litter, as they will infect the ground if used as fertiliser. In reply to your query, re impaction in former case, the hair mixed up in it would come from the rabbit licking itself, the process of formation of these obstructions being a gradual one, the churning motions of the digestive system favouring the "felting" of the hair. The treatment when such is suspected consists of liberal doses of medicinal paraffin given daily, in the hope that it will soften up the mass and aid its passage through the canal.

J. W. M. The post-mortem findings were as follows:—The hen was affected with gout, the pericardium being thick with the deposits, and the kidneys blocked with urates; the small turkey chicks had evidently become chilled after the death of the hen, as the trouble in their case was pneumonia; the older turkey chick had suffered from an impaction of the gizzard and four or five inches of the duodenum by a twisted and tangled mass of grass, forming a veritable "rope." This latter condition is of frequent occurrence just now, and shows the advisability of either cutting or feeding down the grass before allowing young birds to run on it.

J. T. The post-mortem examination of the hen showed that she had sustained a rupture of the uterus, which had been followed by peritonitis and sepsis. She was in a very fat condition, which is a predisposing factor in these accidents.

HARPER-ADAMS' AGRICULTURAL COLLEGE, NEWPORT, SALOP.

POULTRY LAYING TRIALS, 1924-25.

Report for the Seventh Period.

The seventh month of the trials, which commenced on April 18th, and terminated on 15th May, has not been marked by any special feature. The month on the whole has been damp, with a succession of frosts during the first two weeks. The general health of the flock, however, continues satisfactory.

Egg production has been interrupted by many cases of broodiness, but these have, in most cases, quickly yielded to treatment, and the birds restored to the pens. The average production for the whole of the birds is naturally lower than the 20 eggs reached in the previous month, but is still creditable, the figure being 18.9 per bird. There has been a slight increase in the proportion of second-grade eggs.

The first pens in their respective sections in the Small Flock Trials have all maintained their positions, Pen 79, in the Wyandotte Section, being a good leader. Among the Single Birds Mrs. Wilson's White Wyandotte and Tom Barron's Rhode Island have taken the lead in their respective sections. Mrs. Wilson's White Wyandotte has a record of 27 eggs in the month, and laid daily, without a break, from 31st March to 10th May.

SUMMARY OF THE LEADING PENS.

*Championship Trials.

Section 1. Light Breeds.—A. White (Bl. L.), Malpas, Cheshire, 1293; Miss N. H. Bell (W.L.), Ightman, Kent, 1301; Frank Snowden (W.L.), Keighley, Yorks, 1204; H. Sutton and Sons (W.L.), Preston, 1250; Warwick Rogers (W.L.), Market Drayton, 1167.

Section 2. Heavy Breeds.—W. Lister (L.S.), Northiam, Sussex, 1345; E. Watson (W.W.), Colne, Lancs., 1340; Miss H. Fowler (W.W.), Blackburn, 1467; G. B. Metcalfe (W.W.), Lechlade, Glos., 1312; F. H. Collins (W W.), Bewdley, Worcs., 1229.

Small Flock Trials.

Section 1. White Leghorns.—W. McMahon, Newton Mearns, Renf., 866; J. and W. Purdie, Lanark, 845; F. A. Welch, Cheltenham, 815; H. Smith, Sheffield, 825; G. Keith Simmons, Honiton, Devon, 756.

Section 2. White Wyandottes.—D. W. Gunston, Bramdean, Hants, 932; Allen Bros., Harrogate, 830; Frank Snowden, Keighley, Yorks, 798; Mrs. A. Wilson, Breconshire, 792; Dr. A. E. Harrison, Daventry, 792.

Section 3. Rhode Island Reds.—F. and A. H. Sanders, Rugby, 828; R. Green, Preston, 777; Dashwood Farms, Ltd., Doddington, Oxon, 750; E. L. Pattison, Longton, Staffs., 766; Mrs. Molloy, Crumlin, Co. Antrim, 795.

Section 4. Sussex.—F. Rossall-Sandford, 747; W. Bradbury, Bury, Lancs., 762; Capt. A. A. Plimpton, Beverley, E. Yorks, 784; A. Hughes, Malpas, Cheshire, 746; A. Robinson, Bawtry, Yorks, 756.

Section 5. Black Leghorns.—W. A. Lansley, Whitchurch, Salop, 728; Mrs. M. B. Cowley, Abingdon, Berks, 725; C. L. and J. A. Thomson, Holywell 729; Wilson Beattie, Rothersthorpe, Northants, 703; J. H. Hodkinson, St. Ives, Hunts, 669.

Section 6. Any Other Light Breeds.—Storer Bros. (An.), Didsbury, Manchester, 702; H. Lyndon Lemon (La. B.), Devizes, 700; Stanley Street-Porter (An.), Ely, Cambs, 698; The C.W.S. (An.), Whalley, Lancs., 677; W. Hammett (An.), Blackpool, 679.

Section 7. Any Other Heavy Breeds.—Miss P. Mills (Rks.), Bishop's Castle, Shropshire, 832; F. R. Welch (Rks.), Bewdley, Worcs., 769; O. C. Brown (Rks.), Scunthorpe, Lincs., 778; Miss M. Fowler (Bf. Orp.), Blackburn, 728; P. E. White (Rks.), Market Drayton, 709.

Single Bird Trials.

Section 1. White Leghorns.—W. Hamnett, Blackpool, 160; W. M. Golden, Rugby, 157; N .S. Robinson, Spilsby, Lincs., 146; J. Potter, Wigan, 147; S. E. Illingworth, Bradford, 149.

Section 2. White Wyandottes.—Mrs. A. Wilson, Garth, Breconshire, 162; S. Street-Porter, Ely, Cambs., 151; S. and T. Greenall, Grantham, 150; A. Hughes, Malpas, Cheshire, 148; W. Barron, Preston, 143.

Section 3. Any Other Light Breed.—S. Street-Porter (Bl. L.), Ely, Cambs., 140; A. White (Bl. L.), Malpas, Cheshire, 135; R. A. and A. M. Johnson (Bl. L.), Chalford, Glos., 133; W. Hamnett (An.), Blackpool, 134; Chivers and Sons, Ltd. (Bl. L.), Cambridge, 121.

Section 4. Any Other Heavy Breed.—T. Barron (R.I.R.), Preston, 149; O. C. Brown (Bf. Rk.), Scunthorpe, Lincs., 142; W. M. Golden (L.S.), Leire, Rugby, 136; A. White (L.S.), Malpas, Cheshire, 138; E. L. Pattison (R.I.R.), Longton, Staffs., 134.

THE LANCASHIRE UTILITY POULTRY SOCIETY.

INTERNATIONAL EGG-LAYING TEST, 1924-5.

Seventh Month Report—April 4th to May 1st).

The excellent egg average which has been characteristic this test in the preceding reports has been well maintain during the seventh period, as a glance at the leading pens a individual birds for the month will show.

Pen 31, W. L. Allen Bros. (10 birds), heads the large breede section with an average of nearly 24 per bird, closely follow by Pens 44 and 46 with an average of 23 each. In the sma breeders' section, Pen 83, P. E. Scott (five birds), again hea this section with 127 eggs, the five birds laying 25, 26, 22, 27, a 27; total 127.

Below is a list of the leading pens and individual birds f the month in the number of eggs laid. Figures are Eggs f month and total Eggs to date respectively.

Large Breeders. Section 1.—W. Crabtree, Twiston, 208, 131 F. Snowden, Cowling, 225, 1189; R. Marshall, Forton, 218, 1274.

Large Breeders. Section 2.—J. R. Hull, Thornton-le-Fylde, 1 1126; F. Harvey, Bretherton, 193, 1197; Mrs. M. Molloy, Cruml 213, 1162.

Large Breeders. Section 3.—F. R. Welch, Bewdley, 189, 114 W. Hamnett, Blackpool, 130, 1052; W. B. Bradley, Broughto 196, 979.

Large Breeders. Section 4.—F. Snowden, Cowling, 203, 11 R. Rodwell, Nelson, 206, 1158; J. Thompson, Shrewsbury, 232, 12

Large Breeders. Section 5.—S. Street-Porter, Ely, 186, 1141; Rodwell, Nelson, 217, 1255; G. B. Metcalfe, Lechlade, 211, 1116.

Small Breeders. Section 6.—J W. Lodge, Holmfirth, 100, 6 Dr. J. E. Helm, Newchurch-in-R., 82, 617; P. H. Sephton, Ruffo 105, 629.

Small Breeders. Section 7.—C. C. Humber, Hoole, 87, 625; Lumb, Hebden Bridge, 111, 628; W. H. Fletcher, Woodplumpto 85, 507.

Small Breeders. Section 8.—T. Rossall-Sandford, Shrewsbu 103, 657; Col. S. Sandbach, Abergele, 89, 457; W. J. King, Leamin ton Spa, 92, 392.

Small Breeders. Section 9.—F. F. Fisher, Tarleton, 111, 6 G. W. Sutcliffe, Hebden Bridge, 115, 675; J. W Purdie, Lana 116, 617.

Small Breeders. Section 10.—W. A. Lansley, Whitchurch, 1 603; O. Rawlinson, Waverton, 108, 577; J. Stuart, Garstang, 88, 5

Small Breeders. Section 11.—Guy Mart, New Longton, 96, 5 Elizabeth Priestley, Oxford, 83, 539; Capt. J. T. M. Mee, Gresse hall, 77, 455.

Single Bird. Section 12. Heavy.—J. R. Hull, Thornton-Fylde, 20, 139; J. Rainford, Penwortham, 19, 133; S. Marquis, Gre halgh, 18, 127.

Single Bird. Section 13. Light.—S. J Parsons, Musbury, 138; F. Snowden, Cowling, 24, 117; W. Rogers, Market Drayt 19, 138.

Novice Breeders. Section 14. Heavy.—Miss Walker, Hothsall, 96, 590; W. Ellwood, Galgate, 93, 533, R. Hargreaves, Bart 99, 557.

Novice Breeders. Section 15. Light.—W Ellwood, Galgate, 639; S. Marquis, Greenhalgh, 106, 567; R. Bradley, Hutt 106, 592.

BREED AVERAGES AND SUMMARY.

Breed	No. of Birds.	Deaths.	Eggs.	Points.	Avera Eggs
White Leghorns	400	7	42735	43553	106.7
White Wyandottes ...	368	7	38618	39589	105.1
Rhode Island Reds ...	242	3	23663	23597	97.7
Black Leghorns	96	3	10124	10438	105.4
Light Sussex	55	—	4686	4796	85.1
Anconas	35	2	3378	3451	96.1
Buff Rocks	27	—	2419	2487	91.3
Buff Orpingtons	12	1	878	897	72.7
Barnevelder	11	—	959	1048	86.2
Australorps	6	—	469	450	78.1
Buff Leghorns	5	1	455	472	90.8
Exchequer Leghorns	5	—	329	356	65.8
Wheatou Marsh Daisy	5	—	437	480	87.4

CHAS. PARKER, Secretary, Fox Street, Prestor

WYE COLLEGE DUCK LAYING TEST, 1924-25.

Seventh Period.

Figures are total score to date.

Khaki-Campbells.—Miss Harrison Bell, 764; Capt. R. A. Lo 665; Major J. Dugdale, 638; Mrs. M. A Gibson, 623; A. E. Barr, 5 Capt. P. Thompson, 591.

Indian Runners.—W. R. Partridge (W.), 730; R. A. and A. Johnson (W.), 625; W. R Partridge (W.), 588; A. Appleyard (W. 573; The Molassine Co. (F. and W.), 557; R. H. Berney (F. a W.), 522

Buff Orpingtons.—Capt. W. O'G Cochrane, 547; C. C. Chittend 411; A. F. Stevenson 379; Lucas Poultry Farm, 358.

Magpies.—C. N. Goode (B. and W.), 490; F. Boothroyd (B. a W.), 457; J. G. Williamson (Bl.), 429; Ouse Manor Farms (B 377; Capt. C. K Greenway (B. and W.), 318; Ouse Manor Far (B. and W.), 309.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

THE BRITISH BARNEVELDER CLUB YEAR BOOK.

A copy of this is to hand, and the first announce- ent is the President's resignation. I am not aware f Mrs. Walker's reason; but she states that he does not feel it possible to continue acting as resident because of her activities in the Black arnevelder Club. She goes on to say it is entirely ithout bitterness that she has taken this step and he will always look upon the British Barnevelder lub as the parent club, and will continue to do her tmost to further its interests.

The Hon. Treasurer states that the financial posi- on is a very sound one. Membership is increasing. t the last General Meeting it was 131, during the ear 57 new members had joined, which would make 88, but there had been a few resignations. It is oped that with the present rate of increase, the club ill reach 200 members during the coming year. upport of shows has been good.

It is mentioned that interest continues to increase broad, and requests for the Year Book have been eceived from Canada, South Africa, Australia, New ealand, and Denmark.

Mr. W. R. Partridge was the winner of the medal, resented by the Club, for the highest scoring mem- er's pen at the Harper-Adams' Laying Trials. He lso won in the Barnevelder Section there.

Capt. Moser, in an interesting article, entitled, Miscellany," has a word of warning to say as to ze:—"Beware of too much size. Size has one more to spoil breeds in the past than ything else. Once it creeps in it is very diffi- lt to eradicate." It is hoped that the advice will be ken. One thing I am sorry to see, and that is, that ere are Exhibition and Utility Classes. To my ind this is the greatest mistake that could be made ith a new breed. The new club was in a strong sition, and could have definitely drawn up a stan- rd which would have been consistent with Utility d Exhibition characteristics. This could easily have een accomplished had due regard been given to tility Qualities, and no encouragement given to the aggerated values placed upon Exhibition points. We all soon see breeders advertising both Exhibition d Utility Barnevelders. What could such an adver- sement convey to the mind of anyone with a odicum of common sense?

I feel that no greater mistake could have been ade than to develop the breed on these lines. Here have a comparatively new breed with a type arcely fixed: and already there is a division in the mp. What is the real difference between Exhibition and Utility Barnevelders? Are not both bred strictly to the British Barnevelder Club Standard, or are the latter but the culls from the Exhibition stock?

"POULTRY-KEEPING—DO'S AND DONT'S."

Some two or three years ago Mr. C. A. Flatt produced a most useful book, entitled, "Poultry-Keeping." Now he has come forward again with a small volume, entitled, "Poultry-Keeping—Do's and Dont's." In the introductory matter he says: "There are many pitfalls in poultry-keeping, and to fail is a woeful experience." That is perfectly true, as is also his remark that "observation always pays."

The book deals in a concise manner with notes upon General Management, Suitable Houses and Runs, Useful Breeds and Guide to Selection, Hints on Feedin, Treatment of the Sitting Hen and Incubator Management, Chicken Rearing, and Eggs and Their Production. Poultry Ailments are all included in this little volume.

In such a small space Mr. Flatt will not claim to give the fullest details, but it is a very useful little volume, handy to pick up at any time when you are in a difficulty, and contains some warnings as to mistakes which the novice is likely to make, which he does not discover for himself until he has made them.

THE GOAT.

Although I am not a goat-keeper, I find much to interest me in the Year Book of the British Goat Society. Apparently what has been said of the hen years ago is being said of the goat now. At least, I gather so from an article on the goat: "Her Place in the Economy of the State," by Miss Gresley Hall. "'Goat-keeping does not and cannot pay,' and 'Goat-keeping must always be a most expensive hobby,' are statements we hear constantly in the goat-world," writes Miss Hall, and then, too, in a very clever article, she disproves these assertions just as we, in the past years, have had to disprove the same silly remarks about the hen. These remarks are usually made by the inefficient, or, at least, by the failures.

Miss Skidmore writes on "The Heavy Milking Goat," and asks whether she is delicate and does she pay? To the first question she gives a most emphatic negative, and she says very definitely that the heavy milkers are paying animals, and that their milk *and butter* sell well.

Mr. F. H. Stainton, F.R.C.V.S., writes on "Rickets." His article is so interesting that I hope, with the permission of the Editor, to reproduce some of it in an early issue of "Eggs."

"Mendelism and the Goat-Keeper," by Mr. S. A. Asdell, should prove of interest to poultry-keepers.

Mr. Percy Wainwright writes on "The Goat as a Good Investment," while Mrs. Arthur Abbey gives "First Aid to the Novice." "Proteins" are the subject of Mr. J. C. Urquhart, who is writing in a very interesting manner.

"Some Points on Goat Management," by Mrs. De Fanny Brown; "Goats' Milk Cheese," by D. G. Sager.

Dr. Crewe, who is well-known to many of our readers, writes "Notes on the Genetical Aspects of Fertility and the Sex Ratio."

"Goat Breeding" is the report of a lecture delivered by Lady Helen Graham.

There are many other articles, and the book is profusely illustrated. It is a very interesting publication and wonderful value for the low price of one shilling and sixpence.

There is much of it that is of interest to the poultry-keeper, and much that is written is of practical value to us.

THE SPRING CHICKEN.

At this season of the year complaints are always rife as to the treatment meted out to producers by the Market Salesmen. I have two letters sent me this week, which are fairly typical.

In the one case the writer states that he sent 42 cockerels in prime condition—all an average weight of at least 2½ lbs.—to a well-known firm of advertisers. In return he received £2 2s. 9d., and considering it was early in May this price of one shilling each he thinks most unfair. I can only give the facts as taken from his letter, but I am hoping to get further particulars.

In the other case, 48 cockerels were sent to another firm—

Live weight, four crates ...	300 lbs.
Tare	120 lbs.
	180 lbs. Average 3¾ lbs.

Salesman's weight dead and plucked 120 lbs. Average 2½ lbs.
Loss 60 lbs. Average 1¼ lbs.

The question is, is it possible for 48 birds to lose 1¼ lbs. each? I must say that to me it seems very excessive.

As before mentioned, these complaints arrive every year, and have done for more years than I care to count. No action has been taken in the matter. Producers are content to grumble and carry on, even in such times as this.

We all know what we have to pay for a **portion** of chicken when we dine in a London restaurant. Has anyone any suggestions to make?

FOOD PURCHASE SCHEME.

Business with the Food Purchase Scheme is becoming brisk. There is a great demand for the Chick Mash, Growing, Layers' and Breeders' Mashes. Members are reminded that these can be obtained in lots of not less than 5 cwt. at the two-ton rates. Prices will be sent to any member on receipt of a post card to these offices.

OUR FRONT COVER.

Mr. H. B. Carrington, M.A., will be known to all our readers as the energetic Secretary of the Utility Duck Club, and as a breeder of Khaki-Campbells, Fawn and White Runners, and also R.I. Reds.

What possibly will not be known to them is that he is interested in other branches of agriculture, and has a herd of pedigree large Black Pigs, an also one of Guernsey cattle. True the latter ar only in embryo, but if Mr. Carrington perseveres as he has with his ducks, there is no doubt tha one of these days he will have something good.

Few men have done so much for the utility duck as he has. We had the good fortune to visit hi farm some two years ago, and we are sure that n more ideal place for a duck farm could have been designed.

Mr. Carrington attributes his success with hi ducks, which he finds a most profitable side-line to the careful use of the trap-nest—mark the wor "careful."

The "Senlac" duck trap-nest is his own invention, as is the "Senlac Duckling Bath."

Since we were at the farm Mr. Carrington ha increased his flock of Leghorns up to about 40 birds.

He is very interested in the Co-operative movement in agriculture, and devotes a good deal o his time to it. Altogether Mr. Carrington is man of wide and varied interests.

GLOUCESTERSHIRE EGG-LAYING TEST.

Appended is the report on the Gloucestershire Laying Tes (under the supervision of Mr. L. G. Price. County Instructor i Poultry Keeping) for the seventh month ended April 24th:—

During the past month 6,309 eggs have been collected, agains 6.390 the previous month, giving a total of 33,156 for the seve months, and an average of 103.9 in respect of 319 pullets. Th slight decrease is accounted for by increased broodiness, parti cularly in the heavy breeds.

Mrs. Hanks' K-C. duck has now laid a sequence of 192 first grade eggs, whilst in the pen section Maisemore School lead over all; the latter being an example of what the amateu can do.

Visitors are welcomed to the Test, and the Hon. Secretary wil be pleased to forward particulars.

Section A. (1). White Wyandotte (Professional). (Five bird constitute a pen).—P. M Hinton, 2701 pts.; H. Bennet, 2535; H Ludlow Hewitt, 2532; H. W. Fowles, 2390; H. T. Godber, 2329; E J Stone, 2293.

Section A. ( ). A.O.V. Heavy Breed (Professional).—W. R. Par ridge (R.I.R.), 2722; G. H. H. Simmons (L.S.). 2657; J. G. Herber (R I.R.), 2639; Miss M. Lawrence (R.I.R.), 2631; M. C. Beal (R I.R.), 2499; Coaley P.F., Ltd. (R.I.R.), 2235.

Section A. (3). A.V. Light Breed (Professional).—Miss N Townsend, 2754; Miss H. Bayliss, 2710; Sherborne Park P.F., 2547 F A. Welch, 2480; Cotswold Ped. Farm, 2473; G. H. H. Simmon 2424.

Section B. (1). A.V. Heavy Breed. (Confined to owners of no more than 50 laying head).—Maisemore School (W.W.), 2824; A. W Moses (L S), 2782; Miss M. Brown (W.W.). 2474; L. Grist (W.W. 2187; R. T. Miles (B'Veld), 1132

Section B. (2). A.V. Light Breed. (Confined to owners of no more than 50 laying head).—C. E. Skirten, 2451; L. Grist, 2237 Miss M. Brown. 2027; J. D. Crewdson, 1992. All White Leghorns.

Pen Duck Section. (Four ducks constitute a pen).—G. H. H Simmons (K.-C.), 469; S. J. Phillips (K.-C.), 403; G. B. Youn (K-C.), 394; Major J. G. Dugdale (K.-C.), 375; Miss N. Townsen (K.-C), 337; W. R. Partridge (W.R.), 336.

SINGLE PEN SECTION.

Section 1. White Leghorns.—Miss K. Feaviour, 633; L. Gri (6), 631; Miss N. Townsend (5), 621; L. Grist (13), 587; G. H. H. Sim mons, 580; J. L. Brown, 564.

Section 2. White Wyandotte.—H W. Fowles, 668; W. R. Par ridge, 653; W. R. Partridge, 652; Lord Sherborne, 636; Phili Clapham, 613; G. H. H. Simmons, 612.

Section 3. Rhode Island Red.—Miss M. Lawrence, 626; G. I Metcalfe, 535; Miss M Lawrence, 453; W. R. Partridge, 449; Barnes, jun., 429; A. Daunton, 350.

Section 4. A.O.V. Light Breed.—Churchdown P.F. (An.), 602 H. W. Stephens (B L.), 376; Miss M. Johnson (W. la B.), 370; G. Young (B.L.), 367; Churchdown P.F. (B.L.), 334; Major J. G. Dug dale (B.L.), 281.

Section 5. A.O.V. Heavy Breed.—G. H. H. Simmons (Buff R. 640; Miss M. Lawrence (Buff R.), 612; Mrs. E. Weinholt (Aus. Orp. 566; Lady Bledisloe (Aus. Orp.). 532; Miss M. Johnson (L.S.), 488 Major J. Dugdale (L.S), 482.

Section 6. Ducks.—Mrs. H. L. Hanks (K.-C.), 192; F. W. Fowle (K.-C.), 165; Mrs. W. Pearce Ellis (K.-C), 132; F. L. Walters (W.R. 131; W R. Partridge (W.R.). 127; Miss N. Townsend (K.C), 125.

H. S. WRIGHT, Hon. Sec.

ANSWERS TO QUERIES—Continued.

V. R. (York). You cannot fatten cockerels :onomically on dry mash for the reason that ttening meals consist mainly of carbohydrates, ıd these, as I have so often explained before, e more easily assimilated when cooked. A good ttening mash would be :—3 parts middlings, 1 ırley meal, 1 Sussex ground oats, half maize eal, and quarter meat meal. This can be given vice daily, allowing the birds as much as they ill clear up in a quarter of an hour, and removing once any that is left over. In addition, a good ard feed is boiled wheat or rice. The birds ıould be kept perfectly quiet, and will do best a house a little on the dark side. (2) Apoplexy the result of congestion of blood vessels of the ain. No, I have never seen a bird cured of this mplaint. The hen appears to be suffering from rtigo, which is a very different thing, and may due to digestive trouble. Give her some Epsom lts, and keep her quiet ; feed sparingly, and she ould be all right again.

G. A. S. (Wells) asks the old question. He ated some Sussex pullets with a Brown Leghorn ale ; the pullets have done so well that he is ıxious to breed from them next season, but ants to know for certain whether there will be y taints of the Brown Leghorn. You may be ite at rest on that point, "G.A.S.," there will t be, for reasons which have been explained in ese columns before. (2) The sample of fish eal is not a good one. It contains an excess of , and is very smelly.

Fetty (Fareham) bought a sitting of eggs from e extra special pen of a well-known breeder th the idea of saving cockerels for next season's ating. Result : Seven chicks and three cockerels, ıich my correspondent thinks very disappoint-g. One of the cockerels is a promising bird, t the other two are slow to feather, although ıerwise quite healthy, and "Fetty" wants to ow what can be done. If I were he I should ten these two for the table unless he can count for faulty management as a cause of this w feathering, but if conditions are normal, it uld be best not to run the risk of breeding from em. My experience with cockerels which are w to feather is that they breed poor layers, and lets slow to feather are also poor layers. These kerels will probably develop into coarse heavy ds of a type unsuitable as breeders for egg production. (2) The sample sent is Greaves and not at meal ; it has a much higher fat content, but good value at the price.

. D. (Earlstown). A good laying formula uld be :—2 lbs. bran, 4 middlings, 2 maize meal, f extracted soya bean meal, and half meat and ıe meal or fish meal. If you want one for eders the following would be better :—2 lbs. bran, 4 middlings, 1 S.G.O., 1 maize meal, and 1 fish meal. In the event of there being a shortage of green food in either case 1 lb. of good alfalfa meal should be substituted for one of the bran. These mashes should be always before the birds.

K. C. (Horsmonden) writes that she is buying a pen of Light Sussex for breeding next season, and wants to know whether it would matter if she runs them with R.I. Red hens (about twenty of them, and no male bird) on free range, until the time arrives to pen them up for breeding in November. No, no harm would arise from this cause at all. There may be a little scrapping, but there is no other reason why they should not be run together.

X. Y. Z. (Leicestershire). We cannot give you the address you require, but if you will send us a letter in a stamped envelope we will forward same for you. It is against our rules to forward addresses of contributors to this journal.

M. S. (Wilmslow) writes to know whether it is possible to rear turkey chicks on my chicken formula. I can only say that I have not tried to do so myself, but members have occasionally written to say that they have been most successful in doing so ; but I would point out to my correspondent that dry mash feeding with a turkey which is intended for the table, although it may be most successful during the early stages, will not give the quality of flesh that a cooked mash would do, and so after the first six or eight weeks I should strongly recommend her to feed wet mash. Moreover, I would give less bran and more S.G.O., as oats helps to build up a frame. An abundance of green food is necessary. Turkeys have not big crops, so that they want feeding very often. My correspondent is giving dry mash, and, in addition, a good brand of biscuit meal scalded with water, and served in a crumbly condition with green food (chopped nettles, chives, dandelions, clover, etc.), but the chicks will pick out the green food and leave the biscuit meal. That will not matter at this stage. She adds that last year all the turkeys were fed on dry mash from ten weeks old. This year they are having dry mash from the shell. I think "M. S." might persevere with the feeding as she is doing at present, closely observing results, but later on I should gradually substitute wet mash for dry.

POST-MORTEMS—Continued.

P. The post-mortem findings in the case of the hen were tubercular peritonitis and gout. This, of course, is an infectious disease, and this bird's immediate incontacts should be segregated, and any showing illness of any description destroyed without delay and burned. The premises should receive a very thorough disinfection, and the run after being raked over to remove litter rubbish, etc., dressed heavily with lime. There is no treatment even if it was advisable, and I should recommend that if the birds be few in number the destruction of them, and a start with healthy stock made again.

T. G. The post-mortem examination of the L.S. pullet showed that the liver had become completely degenerative, and that she was loaded with internal fat. The other organs were healthy, but the digestive processes were not being carried on properly owing to the condition of the liver. The trouble had already started when you reduced the maize ration, and once these degenerations begin the tendency is for them to continue, and to produce their results afterwards, even when the inciting cause has been removed. Treatment is likely to be ineffective, but at the onset of symptoms a dose of castor oil would help to clear the system of effete matters, and the digestion would be improved by a digestive tonic, such as equal parts of powdered Gentian, ginger and Nux Vomica, a teaspoonful in the mash for twelve birds twice daily.

W. P. The post-mortem examination of the W. Wyandotte chicken showed that apoplexy of the lungs had occurred. The cause of apoplexy is usually a sudden rise of blood pressure associated with weakness of the blood vessels. Any excitement or fright, or severe exertion, causes a rise of blood pressure, but what occasioned it in this case is only conjectural. The other organs of the bird were healthy, and there were no signs of any of the infectious diseases.

A. M. The post-mortem examination of the R.I.R. hen showed the cause to be diphtheritic roup, suffocation having occurred in this case by the blocking of the larynx with a plug of the deposit. The trouble is, of course, infectious, and the birds should be isolated and the premises very thoroughly disinfected. A daily examination of the mouths and throats should be made, and any yellow diphtheritic patches scraped off and burned, the resulting raw surfaces should be painted with tincture of iodine. Plugs of deposits seen in or around the larynx may be removed with a fine pair of dressing forceps, and many birds can be saved by doing so. As general treatment, one dram of copper sulphate should be dissolved in each gallon of the drinking water, and the entire flock allowed no other water than this.

Ash View, Heaton Grove, Bradford.

Dear Sir,—I might say that I have found "Eggs" to be the most helpful paper I have ever seen, and only wish I had taken it sooner, as I should have started on quite different lines if I had done so.

Yours faithfully,

(Signed) G. H. GRIFFITHS.

Correspondence.

COMMERCIAL EGG FARMING.

To the Editor of "Eggs."

Dear Mr. Newman,—I am writing this letter, hoping that in the general interests of large Commercial Poultry Farmers an exchange of ideas and experiences as regards this season's rearing and incubating results may be mutually helpful.

To be of any use as a basis for comparisons, I will give a few figures and other necessary data, but I will endeavour to be as brief and concise as possible, as I do not want to encroach on your good nature too much.

In looking back over this season's incubating results, as experienced on this farm, I will at once admit that the very early hatches were most disappointing. By the early hatches I am referring to those incubated during early January and February. The eggs seemed normally fertile, the breeding stock, both hens and cocks, were if anything above par, yet the percentage of hatch was miserably low, and the chicks difficult to rear. They were slow to feather, and were generally backward. The later hatches from the middle of February onwards were particularly good. Here we have had an average of 80 per cent. of all eggs put in. The chicks were strong and healthy, and gave us no trouble whatever, and were as different as chalk is from cheese to the early ones. I might add that the type of incubator used was one of the new "upright-grand" types for 11,000 eggs. These incubators are, I think, rather rare in this country at present, but it is a type that I personally delight in.

It is difficult to exactly account for the poor results of the early hatches, as the breeding stock was treated exactly similarly throughout the season, and were in every way grand stock. I think myself that the explanation must be found in the perpetual lack of sunlight experienced all through the winter and spring months which reacted unfavourably on the birds.

I forgot to mention that a very noticeable feature in the early results was the fact that the hatchability of the eggs from the very high fecund stock was the most disappointing of all the pens, and the best results were from the birds that put up the poorer records in their pullet year. By the best I refer to those with pullet records of over 200, and by the worst those with records of 170, but not lower than 140. It rather looks to me as if one ought to avoid breeding from the high record hens until later in the season.

Looking back over the rearing season, the same bad results were noticeable in the early hatches as was experienced in the incubating department. This was perhaps reasonable, although I have in the past often noticed that, given bad incubating results, one made up in the easy rearing of the chicks, but not so this year. The early chicks were extremely difficult to rear, hey took long to mature, feathered badly, and were enerally a miserable lot. The later chicks from the ame stock were hardy, healthy, feathered quickly, nd were generally much above par. I suppose the ack of sunlight previously mentioned was also respon ible for this. As regards chick losses I experienced, 5 per cent. losses in the early lots, whereas the later nes, requiring very much less care, only suffered to he extent of less than 10 per cent. It might interest ome of your readers to know that my Brooder House olds 10.000 chicks at one time, divided into units of 00. The whole installation is heated by one anthra ite stove, which supplies the necessary heat to the ot-water pipes which keep the chicks at the right emperature. This one stove requires very little atten ion, and consumes on an average one ton of coal a eek, costing about £3. This works out at 3s. per eek per unit, which I consider most economical. To fficiently look after all these chicks I find that two xperienced hands do the work well.

So far I find that the average pullet percentage om the chicks I have so far separated is working out t about 59 per cent., which is slightly higher than I ave previously experienced in my eleven years at the ame.

Just a few words and figures about the adult stock ay be interesting to some. I carried last winter ightly under 8,000 laying stock, of these 4,000 were st year's pullets, the balance was composed of ostly two-year-olds, with a sprinkling of three-year ds

The lowest point the egg curve went for the whole ock was 13 per cent. in early November (this was e lowest point ever recorded at Sonimor), and the ighest point it touched was 71 per cent. in early pril (this was the third best record, the very best ached 78 per cent. in 1923). The pullet percentage r 1,300 trapped birds reached 78 per cent., and at its west 30 per cent. I should mention that these per entages are worked out for a week's result, and not r a day's.

In order to make comparisons more interesting here e a few more figures. Since last 1st February to the me of writing, the 27th May, I have on this farm oduced 480,000 eggs, which works out at about 4,280 day. The actual highest individual day's output as just two under 5,000, and at the present time the ily output is hovering round this figure. The losses om all causes amongst the adult stock works out for e year at under 5 per cent.

I would like very much to give a lot more figures r comparison purposes with other commercial con rns, but I am afraid I would exhaust your patience. would, however, like to get into touch with some of e pessimists who so continually predict disaster to e large poultry farmer. I personally have so much ith in the future that I am already planning to still rther expand Sonimor. Last winter Sonimor car ed just under 8,000 laying stock. This winter I have ery confidence I shall carry over 10,000.

All success to your up-to-date paper.

Yours faithfully,

HECTOR M. MORISON.

MARKETING OF EGGS.

To the Editor of "Eggs."

Sir,—May I add my voice to what I imagine will be a chorus of approbation of Correspondent's letter in the issue of May 13th? I trust that the Society will now turn on a Committee to investigate the possibilities of marketing.

I think it will be found the general and fixed opinion of all retailers that eggs cannot be sold in the shop on the scales, and that idea may be dropped once and for all. That clears some ground.

On the question of weight Correspondent's method appears to me almost perfect. Our first aim should then be to clear away the grading of English eggs, as it is at present done, and to get Correspondent's scheme, or one like it, established. Surely Correspondent's letter emphasises my previous contention that the present grades 1 and 2 are useless as far as the producer is concerned. Will not the S.P.B.A. now turn its attention to the grading, and secure a method of quotation which does not penalise the man who produces large eggs? Breeders will not long continue to flourish if the produce of their stock does not fill the pockets of their customers.

Some south country counties are now holding, or going to hold, Laying Trials, where the size of the eggs is going to be a more important factor than mere numbers. What is the use of this encouragement of the large egg if it fetches no more in the market? Here is an enormous opportunity. Change the grading. Get an agreement as to a fair basis for the grades, and press the authorities to put it into force.

This would do the commercial egg farmer more good than anything, and would probably help the specialist breeder to a decent price for birds bred for laying large eggs. The commercial egg man is a necessity if the breeder is going to survive.

We can now get to the next point. Correspondent's prices are wonderful. Our eggs are despatched the day they are laid, excepting Sundays, but I cannot get such prices because there is no age standard. We have up to the present laid aside our most important weapon. It was touched upon by Correspondent in the issue of May 13th, but to my mind it is the vital point for the producer.

I refer to freshness. There have been schemes for marketing eggs of various sorts, but I have not yet heard of one which takes advantage of our unique opportunity as regards our own markets —FRESHNESS! No foreign egg can compete on this score, yet owing to our methods it actually at present does, unless, of course, freshness does not count at all, and that I cannot believe.

I have before me one large London Dairy Co.'s circular, which refers to "daily collection" and "prompt despatch." There is to be a "slight additional charge for the same" (eggs), and it is intimated that owing to the limitation of the supply standing orders should be given to prevent disappointment. So there is a demand, and apparently a great one. I have found it to be so, yet, although our eggs leave here twenty-four hours old, I cannot get a price for them higher than the market price in the papers which has been for weeks on a par with the price for Chinese, because there is no standard. I therefore would suggest that the method employed for Grade A milk should be utilised for eggs. I would suggest that to qualify as Grade A eggs should be certified as being habitually despatched to the retailer within three days of the time of laying. I should be pleased to formulate a scheme for achieving this end if the S.P.B.A. will take the matter up. My own retailers are whole-heartedly for it, as it would give them a secure basis for the sale of a superior article at a superior price. There is no standard at present, and a retailer setting up one for himself may find himself cut out by competitors with inferior stuff. Such grading by age would eliminate from the Grade A market all weekly collections, and I ask you to consider what that would mean. I am convinced that it is the vital weapon that we have in our hands to use, not only against the foreigner, but also against the slovenly English method, which crowds out the good article by the lowering of the general standard.

Let the Society press for four grades of eggs by weight and two grades of eggs by age, and see what the price would be for English 2¼ oz. Grade A eggs.

Finally, I would ask you to turn your attention to imported chickens. At present American frozen stuff is coming over at very low figures, and undoubtedly competes with English spring chickens. Will the Association press that this imported meat be labelled when exposed for sale as imported butcher's meat and bacon must be?

Will they, while considering this, also investigate the cold storage of chickens, and press for the marking of these for what they are? I object neither to imported frozen birds nor to home-grown birds, but I desire to have them labelled for what they are, so that they should not interfere with the genuine fresh home-grown article.

I am, Sir, your, etc.,

F. G. SWAN.

If Mr. Swan will send us details of his proposed scheme we shall be pleased to place the matter before the Council of the S.P.B.A. With reference to his remarks on the Marking of Imported Table Poultry, that question is already receiving the attention of the National Poultry Council.—(Editor.)

80, Cobden Street, Walsall, Staffs.

Dear Sir,—I would like to add my personal thanks to your good self for the instructive articles you write and publish from time to time in "Eggs," which have made the keeping of poultry much more enjoyable and also profitable, especially for the backyarder and small man generally.

Again thanking you for past help, and hoping you will be able to keep on the good work.

Respectfully yours,

(Signed) E. O. MORRIS.

SALE OF AND PRESERVING EGGS.

To the Editor of "Eggs."

Dear Sir,—I don't quite understand why M Morton Nance brings my name into his letter ar figures of 20th May. Possibly he means th from 1st December to 9th May he sold eggs f what they would fetch, so as to just "carry on, not having the capital or time, etc., to preserv but this is only surmise on my part, as his figur give no details. I see that during June and Ju he sold preserved eggs (chilled) at 2s. 6d. p doz., which is right enough. His figure £15 f chilling certainly does leave me a bit cold.

Including a ten per cent. depreciation o utensils, my preserving costs me 6d. per 100— mere decimal figure per dozen. I therefore see r reason why I should not stick to my opinion th a man is a fool to sell his eggs for "give-away prices when, with a minimum of trouble and e pense, he can get 2s. 6d. per dozen—if not mor

If a man keeps fowls as a "hobby," and rath than take such trouble he dumps his eggs on th market regardless of costs, he is doing his be to make many hardworking "Ex-Service" allo ment holders' lives an impossible one. If a ma has a hobby, it is but a reasonable request tha as far as possible, he should not injure those **wh have to** do the same thing as a living.

Yours truly,

J. H. BURN-MURDOCH.

EGGS BY WEIGHT, OR RATHER GUARANTEED EGGS.

To the Editor of "Eggs."

Dear Mr. Newman,—Once having entered th lists on such an important subject as this, it i rather difficult to leave unanswered the querie raised by Mr. H. D. Brufton in your issue of 27t May, so I will ask your permission to make a fe further remarks.

It should be known to Mr. Brufton, and t others, that the prices paid in Smithfield and othe markets are for the good, bad and indifferent egg that arrive from all parts of the country. It is fact, and a confidential higgler will admit to yo that the average egg that goes to market may b anything up to a couple of months old. It is th "farmer's egg" laid in any outbuilding, yarc ditch or hedge; and "found" when discovered It does not seem possible to me that any produce of guaranteed eggs should accept the same pric for his eggs as the former will fetch in the marke I almost believe that my amazement must b greater than Mr. Brufton's.

The prices which are paid for my eggs, as state in your issue of 13th May, are real fact, and nc the "machinations of a disordered brain." The copies of invoices are here for inspection.

I am writing the retailers of my eggs, asking if they will pay the same price basis to other producers of eggs such as mine, and, if they will, then I will write you again. With the marking of foreign eggs becoming a fact, there should be good opportunities for the honest and progressive producer when contracts are signed in late summer or early autumn.

The last paragraph of Mr. Brufton's letter is very difficult. Has it not always been accepted that the failure of the British egg is because of ts bad marketing? Conditions obtaining as shown n the second paragraph above are the cause of he lack of faith in the British egg. The public knows that it can place more reliance in the Dutch and Danish egg than it can in the British; hence my continued pressing for the guaranteed egg. t is this confidence we must capture for the British egg, and we shall only do it by supplying or marketing Clean, Graded, Guaranteed Eggs. Eggs guaranteed never more than three to four days old, and marketed at least twice a week. When a sufficient number of us produce such eggs, nd they are sold through equally honest retailers, we shall find we cannot supply sufficient for the demand—for such eggs. Then **we** shall have gained the confidence of the public, and British ggs will stand highest in the market reports!

Yours very sincerely,
M. R. MORRIS HAMMOND.

CORRUGATED IRON ROOFS.

To the Editor of "Eggs."

Dear Sir,—You ask for experiences re corrugated ron roofs for laying houses. Three years ago I an up an extra house in a hurry, using odds and nds which were lying about. It is ten feet square; he sides are of $\frac{7}{8}$ in. matchboarding; the roof is f corrugated iron with a run of 18 in. from front o back. In normal weather it was satisfactory, ut after frosts there was a good deal of conensation. Temperatures were rather extreme: I hen stretched some stout canvas above the perches nd about a foot below the iron. The result was uite satisfactory, and the birds have kept in plendid health. The canvas is fastened to attens, enabling it to be readily removed for leaning purposes. I should mention that the ouse is thoroughly ventilated; the corrugations hemselves forming excellent air spaces the whole ength of back and front, the six-inch projection of he iron preventing draughts. The chief objection rom my own point of view is that such a house s not readily moved to fresh ground.

Yours faithfully,
HERMANN LEA.

CHICKS AND LIME-WATER.

To the Editor of "Eggs."

Dear Sir,—Re letter from Mr. Winthrope Somerville in "Eggs" May 13th. If Mr. Somerville had given the chicks pure, cool water from the first there might not have been any bowel trouble to cure. They already had milk in the food. What they required after the excessive heat of the incubator was something to cool and cleanse the system. As soon as they got it they recovered.

Being starved for such an excessive time before their first meal would also make a liquid carrying agent like water more necessary. Nothing can take the place of water for humans or chicks.

If chicks have it **always** before them from the first they will never overdrink. The few exceptions to the rule are not in a fit state to live.

A little milk works miracles, but even skim milk is a rich food and cannot take the place of water. I have seen the restless, raving thirst, and consequent diarrhoea of chicks kept with only milk to drink. Giving water seems to be "ANCIENT HISTORY" now. No doubt the lime did much good. In some form they must have it. Hens often call the chickens to the bits of brittle shell in the hatching nest. It is a good plan to chop up egg shells (fresh ones) with a knife on a board and feed to the chicks, also, of course, siftings of oyster shell in the litter. I only resurrect these old and simple plans because the fashion now is to forget the obvious and hunt the wily vitamin.

Yours faithfully,
E. J. PRIDEAUX.

SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

APPLICANTS FOR MEMBERSHIP.

Bishop and Son. Bromstead House, Newport, Salop.
Forage Supply Co., Ltd., Springfield Mills, Leith. Scotland.
Ponting, Mr. and Mrs. E. W., Affcot Hall, Church Streeton, Salop.
McDougall, Coll., Balard, Craighouse, Isle of Jura.
Alexander, F. G., Foxburs, East Brabourne, Kent.
Smith, G. P., 19, Burton Crescent, Headingley, Leeds.
Millington, J., Shordley Green Farm, Hope, near Wrexham.
Jefferson, Capt. L H., Winford P.F., Ltd., Apse Heath, Sandown, I.O.W.
Oliver, Lieut. S. J., Winford P.F., Ltd., Apse Heath, Sandown, I.O.W.
Purnell, Ivor J., Craig-yr-Eos, Southerndown, Bridgend, Glam.
Elder, Moses, Knapethorn, Mealsgate, Cumberland.
Beckham, G., 18, Unity Terrace, Annfield Plain, co. Durham.
Fort, Mrs., King's Standing, Burton-on-Trent.
Pooler, Rev. J. G., Dundrum, Co. Down, Ulster, Ireland.
Berryman, F. Wm., "Coledene," Grove Road, Rayleigh, Essex.
Thomas, C. I. Sandys-, Andersea, Wellington, Somerset.
Robinson, C. A., Springfield P.F., Intake Road, Pudsey, Yorks.
Huntley. A., Wingmore Court, Elham, Canterbury.
Towler, John Wm., Wadlands Hall, Farsley, near Leeds.
Casswell, Miss A. D., Stammerham, Holbrook Route, Horsham.
Culley, James H., Redmoor House, Callington, Cornwall.
Jarvis, Percy, The Poultry Farm, Huttoft, Alford, Lincs.
Sarsfield, Miss E H., Doughcloyne, Garrison Lane, Felixstowe, Suffolk.
Sinclair, Wm., Astley Cottage, Shapinsey, Kirkwall.
Hugh, John M., The Silver Bar Chicken Nurseries, Loanhead, Midlothian.
Shaw, A. E., Ranmoor, Spencer Road, New Milton, Hants.

London Market Advice Table.

By **A. V. CLARKSON.**

JUNE, 1925.

The writer regrets that this month his task is rather an unsavoury one, in that, although he has no doubt on the subject he is writing about, he is also aware that he is, in many cases, advising producers to market their produce at a loss. Anyhow, if not at a loss, then at a rate which is much lower than was to be expected both by themselves and by market salesmen.

It is probably known that both London and the Provincial Markets have suffered an unprecedented drop in the realisation prices of all classes of poultry.

We are always used to, and expect, a drop in prices about June, but this drop has been gradual, and not in the form of an earthquake as it has been this year.

It was hard at first to account for this, but really it is not so mysterious as it seems.

At the commencement of the year there was a poor demand for poultry owing to the wretched weather we experienced, and consequently as less was consumed then there is naturally more to market now, especially of the foreign imported varieties. Included in this latter is to be counted the fact that for the first time since the war the Russians have sent enormous quantities of chicken. These suffered from the bad demand, and the banks, who advanced money to importers, have foreclosed, and the fact is that at the present moment it is possible to buy as many Russian chicken as you may want graded and of very fair quality at from ninepence to one shilling per pound.

Despite the fact that America and Holland have exported their usual or greater quantities than usual, the fact remains that there is a better demand for an English bird than for the frozen imported stuff, and, bearing in mind that with the approach of the end of the London season and the holiday season, it must be to the advantage of the producer to market his surplus as soon as it is sizeable and useable, rather than wait, when common sense tells us the supplies of fresh chicken will be greater, and there can hardly be an increase in the realisation prices.

SPRING CHICKEN.—It is unwise to send any birds scaling less than 1½ lbs. alive to the London Market, and the very small Leghorn cockerels should be sold locally, as they do not pay for the carriage.

OLD HENS AND OLD COCKS.—These should be sent alive, and from now onwards will hardly pay for extra fattening. The Light breeds do not realise quite so much as the Heavy breeds, because, of course, they do not carry so much meat or fat, and in addition there are such large quantities of the Light breeds.

DUCKLING.—The only genuine demand is for an all-white Duckling, which scales 4½ lbs. or over, and should be sent killed and clean plucked.

EGGS.—Eggs will continue in fair demand, but producers should be certain to market their eggs whilst they are fresh, even if the quantity is only ten dozen, rather than wait until they have a larger supply.

Cherry Orchard Cottage, Bromley, Kent.

Dear Sir,—I must, in conclusion, express my deep gratitude to you for the sound advice you give in "Eggs." It has been of the greatest use to me, and my chicks and adult stock are all raised and fed on your formulas, to my considerable profit and the birds' health and stamina.

Yours very truly,

(Signed) HERBERT BINNEY.

YORKSHIRE FEDERATION VISIT TO OTLEY, JUNE 6th, 1925.

Programme of Meetings.

MORNING SESSION (10.30 a.m. to 12 noon).—In connection with the Federation's visit to Otley, special arrangements will be made for the test ground to be open to delegates, members, and their friends. It is hoped all poultry-keepers interested in the work of the County Test will make a special effort to attend.

AFTERNOON SESSION.—Council Meeting of Delegates and Members, commencing at 3 p.m., to be held in the Black Bull Hotel.

A Public Meeting will be held in the Gladstone Hall, Otley, at 6 p.m. Chairman, Mr. F. W. Barker (President, Otley Society). Speakers: Principal Charles Crowther, M.A., Ph.D. (Subject—"Some Fundamental Points in 'Feeding"), and Bruce Wilcock, Esq., Editor "Poultry News."

A. J. MOORE, Secretary.

The Utility Duck Club and the National Utility Poultry Society.

NATIONAL DUCK EGG-LAYING TEST, 1924-25.

Held at Bentley, Suffolk.

Report for Seventh Period—19th April to 16th May, 1925.

Egg production continues to be satisfactory, average being again over 24 eggs per duck. The average for 28 weeks, however, is still seven eggs behind last Test.

The leading pens remain the same. Mr. H. S. Godsmark's (Sellinge, Sussex), three White Runners, retain the highest average per bird and, therefore, still lead for "Daily Mail" Cup Miss Cavanagh (Terenure, Dublin) F. and W. Runners have increased their lead in Championship Section.

Two pens have laid the maximum number of eggs during the month, Mr. E. Fletcher's Black Runners and Mrs. Fred Thompson's F. and W. Runners.

The increase in broodiness in ducks generally is again very noticeable this year. In the first Test held here, 1919-1920, only two ducks out of 220 showed any signs of broodiness. Last year and this year quite a number of birds appear broody, and a few were somewhat difficult to cure.

Health of flock excellent, with one exception, which is suffering from ovarian trouble, and which appears incurable.

A. E BARR.

EGG PRODUCTION OF LEADING PENS.

Section 1. Championship (Five Ducks).—Miss E. Cavanagh (F. and W.R.), 702 pts ; R. A. and A. M. Johnson (W.R.), 628; Capt. R A. Long (K.-C.), 617; Chivers and Son (K.-C.), 612.

Section 2. Khaki-Campbells (Three Ducks).—A. N. Dickson, 424; Oscar C. Brown, 393; Miss Harrison Bell, 391; Maunder and Colson, 388

Section 3. Indian Runners (Three Ducks. — (a) Fawn and White Runners: Mrs. G. Streatfeild, 349; H. B. Carrington, 347; A H. Fox-Brockbank, 344; Ben Clark, 332 (b) White Runners: H. S Godsmark, 444; E. and T. Bullmore, 374; R. A. and A. M. Johnson, 374.

Section 4. Buff Orpingtons (Three Ducks).—Lucas and Power, 327, Mrs. Wyndham Malet, 313; A. F. M. Stevenson, 299.

Section 5. Any Other Breed (Three Ducks).—F. Garner, 368; Dr. T. Hennepe, 346; Mrs. E. Van Bergen, 319.

GLAMORGAN AGRICULTURAL COMMITTEE COUNTY EGG-LAYING TRIALS, 1924-25.

Report for 7th Month—From 19th Oct., 1924-22nd Aug., 1925.

Light Breeds.—J. Joshua, Tondu (W.L.), 322 pts.; R. J. Evans, Abertridwr (W.L.), 285; Howell & Phillips, Barry (W.L.), 247; Mrsv. E. H. Parry, Llantwit Major (W.L.), 218; D. Hopkins, Port Talbot (W.L.), 253; D. A. Hann, Pengam (W.L.), 219.

Heavy Breeds.—J. Joshua, Tondu (R.I.R.), 456 pts.; R. J. Evans, Abertridwr (R.I.R.), 414; A. Evans, Barry (R.I.R.), 417; Harrop Griffiths & Hall, Bridgend (R.I.R.), 366; J. Joshua, Tondu (W.W.), 340; J. R. Thomas, Barry (R.I.R.), 316.

During the 7th monthly period Dry Mash birds laid: 1st grade, 1226; 2nd grade, 518; unrecorded, 29. Wet Mash birds laid: 1st grade, 1144; 2nd grade, 537; unrecorded, 25.

In the previous 6th monthly period Dry Mash birds laid: 1st grade, 1411; 2nd grade, 335; unrecorded, 17. Wet Mash birds laid: 1st grade, 1223; 2nd grade, 410; unrecorded, 11.

Market Report.

IINISTRY OF AGRICULTURE RETURNS. WEEK ENDING FRIDAY, MAY 29th, 1925.

GRAIN AND FEEDING STUFFS.—Fair quantities of British ieat are on offer and sell at late rates, while at Bristol the erage price shows an advance of 3d. per cwt. on the week. im- rted wheat is in moderate demand, and most descriptions ilise rather more money. English feeding barley meets a newhat slower trade at unchanged quotations, and imported nding descriptions also make about recent values. The small oplies of home-grown oats available realise late rates, while London quotations are 2d. per cwt. higher on the week. ported oats are in moderate demand and prices generally ord little alteration. Moderate supplies of maize are on er, and, although trade is of a quiet nature, quotations are mer at all markets, Argentine now averaging 10s. 9d. per cwt. compared with 9s. 3d. in the middle of April last.

Offals are in quiet request and bran is reduced 10s. per ton most markets, the average price now being £7 7s. per ton, ile middlings at Hull and London are 5s. and 2s. 6d. per ton pectively cheaper on the week. Meals meet a slow trade, but generally unchanged, except at Hull where maize and barley als are dearer. Oilcakes are irregular, but at Liverpool y are in limited supply and make higher prices.

MILLERS' OFFALS.—Bran (British): Bristol, £8 5s; Hull, 2s; Liverpool, £7 5s; London, £6 15s. Broad Bran: Bristol, 10s; Hull, £8 2s; London, £8 15s. Middlings—Fine (Imported): ndon, £9 12s; Coarse (British): Bristol, £9; Hull, £8 5s; Liver- ol, £8 5s; London, £7 17s. Pollards (Imported): Bristol, £7 15s; ll, £7 5s; Liverpool, £7; London, £7 7s. Rice Bran: Bristol, 12s; Liverpool, £7 5s. MEAL.—Barley Meal: Bristol, £12; ll, £11 13s; London, £12 5s. Maize Meal: Bristol, £12 5s; Hull, 17s; Liverpool, £11 5s; London, £11. Maize Meal (S. African): stol, £11; Hull, £10 5s; Liverpool, £9 17s. Maize Germ Meal: stol, £11 5s; Hull, £10; London, £9 10s. Maize Gluten Feed: ndon, £9 15s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 15s; erpool, £9 15s; London, £9 15s. Bean Meal: Bristol, £13 15s; ll, £11 18s; London, £13. Fish Meal: Bristol, £20 10s; Hull, ; Liverpool, £18 10s; London, £19 10s.

EGGS AND DEAD POULTRY.

The egg market is somewhat irregular, owing to the cessa- n of consignments from Denmark, and British, Irish and the t imported descriptions make higher rates in consequence, the cheaper classes of foreign eggs are again reduced in ce. Quotations for dead poultry are practically unaltered on week, and business continues to be slow.

Week-end Prices—Eggs (per 120): British, 14s 0d, 12s 9d; Irish, 9d, 12s 9d; Danish, 15s 3d, 14s 6d; Dutch, 15s 3d, 14s 6d; nch, 14s 6d, 13s 9d; Belgian, 14s 0d, 13s 6d; Italian, 13s 0d, 6d; Egyptian, 7s 6d, 7s 3d; Styrian, 10s 3d, 9s 6d; Polish, 0d, 8s 3d; Russian, 10s 0d, 9s 0d; Lithuanian, 11s 9d, 10s 9d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 6d; Irish, 7d, 1s 2d; Others, 1s 9d, 1s 4d. Ducks, 1s 10d, 1s 4d

EGGS.

Per Doz.—Ashford: First, 1s 4½d; Second, 1s 3d. Birmingham: st, 1s 4d; Second, 1s 3½d. Bridgwater: First, 1s 6d; Second, 4½d. Chelmsford: First, 1s 4¾d; Second, 1s 3d. Colchester: st, 1s 5d; Second, 1s 3d. Doncaster: First, 1s 6d; Second, 1s 5d. chester: First, 1s 3½d; Second, 1s 3d. Exeter: First, 1s 4d. eford: First, 1s 1d. King's Lynn: First, 1s 5d; Second, 1s 4d. ndilo: First, 1s 2d; Second, 1s 1d. Mold: First, 1s 3d; Second, d. Montgomery: First, 1s 2d. Newport (Mon.): First, 1s 3d; ond, 1s 2d. Norwich: First, 1s 4d. Oswestry: First, 1s 2d; ond, 1s 1d. Penzance: First, 1s 2d; Second, 1s 1d. Saffron lden: First, 1s 6d; Second, 1s 4d. St. Ives (Hunts): First, 4½d; Second, 1s 3d. Salisbury: First, 1s 3d; Second, 1s 2½d. pton: First, 1s 5d. Truro: First, 1s 2d; Second, 1s 1d. rlisle: First, 1s 4d. *Derby: First, 1s 4d. *Ipswich: First, d; Second, 1s 3d. *Lincoln: First, 1s 5d. *Shrewsbury: First, d; Second, 1s 1d. *York: First, 1s 5d; Second, 1s 4d.

FOWLS.

Per lb.—Birmingham: First, 1s 7d; Second, 10d. Doncaster: t, †5s 0d; Second, †4s 0d. Exeter: First, 1s 8d. Hereford: t, 1s 8d. Newport (Mon.): First, 1s 9d; Second, 1s 4d. Truro: t, 1s 4d. *Derby: First, †5s 6d; Second, †4s 0d. *Ipswich: t, 1s 10d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrews- y: First, 1s 6d; Second, 1s 4d.

DUCKS.

Per lb.—Doncaster: First, †5s 0d. Exeter: First, 1s 8d. Here- : First, 1s 8d.

* At these markets the prices quoted are for sales by pro- ers direct to consumers. At other markets prices are those to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, June 3rd, 1925.

CONTENTS.

EDITORIAL ... 359
MODERN POULTRY FEEDING ... 360
BRITISH POULTRY INDUSTRY EXHIBIT, WEMBLEY ... 361
THE CHINCHILLA RABBIT FOR FUR ... 362
SOME FRUIT GROWING NOTES ... 363
ANSWERS TO QUERIES ... 364 and 369
POST-MORTEMS ... 365 and 369
HARPER-ADAMS' AGRIC. COLLEGE POULTRY LAYING TRIALS ... 366
LANCS. U.P.S. INTERNATIONAL EGG-LAYING TEST ... 366
WYE COLLEGE EGG-LAYING TEST ... 366
S.P.B.A. ... 367
GLOUCESTERSHIRE EGG-LAYING TEST ... 368
CORRESPONDENCE ... 370
LONDON MARKET ADVICE TABLE ... 374
YORKS. FEDERATION VISIT TO OTLEY ... 374
NATIONAL DUCK EGG-LAYING TEST, BENTLEY ... 374
GLAMORGAN COUNTY EGG-LAYING TRIALS ... 374
MARKET REPORT ... 375

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to the poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue. It is hardly necessary to add that the earlier in the week we receive copy the better it is for every-one concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

Classified Advertisements.

(PREPAID RATES).

1d. per word—minimum charge, 1s. 0d. Bold headlines inserted at an extra charge per insertion according to size as below:—

DAY-OLD CHICKS,	per line, extra 9d.
DAY-OLD CHICKS,	„ „ 1s.
DAY-OLD CHICKS	„ 1/6

The number of letters, punctuations and spaces between words should be totalled, when the following table will be of assistance:—

9d. size allows for Thirty-one to one line.
1/- size allows for Twenty-seven to one line.
1/6 size allows for Twenty-one to one line.

When the remittance does not cover the size selected, a smaller corresponding size type will be used.

Insertion constitutes acknowledgment of remittance in the case of pre-paid advertisements. For a series of 13 insertions or more a receipt is forwarded.

N.B.—Advertisements, unless accompanied by correct amount, will not be inserted.

Advertisements must be distinctly marked with the Heading under which they are to appear.

Advertisements must be written on a separate sheet of paper, and one side of the paper only.

Name and Address to be counted. In the case of a Box Number being used, the words, "Box," "Eggs," 94, Farncombe Street, London, S.E.16, to be counted as eight words, i.e., making a total extra charge of 1s 8d. (1s. for Box; 8d. per address) per insertion.

Advertisements must reach this office

FIRST POST FRIDAYS

for insertion in the following Wednesday's issue. Those received after this time will be inserted in the next issue.

PLEASE WRITE CLEARLY, and TO AVOID MISPRINTING OF STRAINS, NAMES AND ADDRESSES, THESE SHOULD BE WRITTEN IN PRINTED CHARACTERS.

Displayed Advertisements.

Ordinary Page, £8 15s. 6d.; Half Page, £4 7s. 9d.; Quarter Page, £2 5s. 0d.; One Column, £2 18s. 6d.; Half Column, £1 9s. 3d.; Quarter Column, 14s. 6d. One inch, 6s. 6d. Special Inside Pages, 25 per cent. on above rates. Cover and other Special Position by arrangements. Discounts for Series. Full Scale of Advertising Rates on application.

Advertisements, addressed to Mr. S. H. BURLES, "EGGS," 94, FARNCOMBE STREET, LONDON, S.E.16, MUST REACH US BY FIRST POST FRIDAY MORNINGS, for insertion in following issue. Those received later will be inserted in the next issue.

A DEPOSIT SYSTEM has been adopted for advertisements, and Advertisers are asked to make full use of same. When remitting direct to the Editor on deposit, the full amount of purchase money should be sent, and six penny stamps extra to cover cost of acknowledgment of same. Cheques should be made payable to the Editor, and sent direct to The Beeches, Rudgwick, Sussex.

FREE 14 lbs
FUL-O-PEP MASI

Here is a remarkable free offer which will enable more more poultry keepers to experience the wonderful advantage Ful-O-Pep Laying Mash and Ful-O-Pep Growing Mash. Th mashes have been *proved* all over the world to be the m productive poultry feeds ever invented.

If you have not yet used Ful-O-Pep poultry mashes, here is your opportunity to prove them for yourself FREE. No matter whether you keep 6, or 6,000 fowls, you will find the Ful-O-Pep way to be a simple system, failure-proof, producing wonderfully vigorous chicks, more and better eggs, healthy and disease-proof hens.

Simply tip the Ful-O-Pep Mash straight from the bag to the feeder—several days' supply at a time. Over-eating is impossible. The mash is so finely ground and blended that no bird can pick out any one ingredient and so unbalance it for the rest. The Fish, Meat, Bran, Alfalfa and Oatmeal, and the six other ingredients, are all making the most perfect blend of modern poultry science has been ab invent.

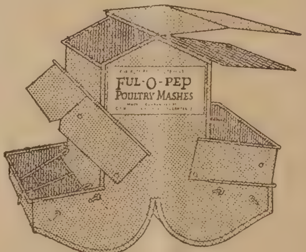
Poultry keepers, the world over, find Ful-O-Pep fed hens produce 40 to 50 eggs than hens fed any other way. C fed on Ful-O-Pep simply leap ahead, put on four weeks' weight in two!

No matter how old your chicks or hens no matter how you have been feeding Put them on the Ful-O-Pep easy, tro proof way *NOW*, and watch results. F the coupon below and you can do it *FR*

THE FUL-O-PEP ALL-AGE FEEDER

The improved All-Age Feeder was designed by the Manager of our Poultry Feed Department, and thousands of poultry keepers have proved it perfect.

The Feeder is made of strong gauge galvanised sheet steel. It holds nearly 20 lbs. of mash It will take care of 15



adult birds, or 50 chicks. It saves pou keepers trouble and wastage of food.

The illustration shows side of the adjustable raised for young chi and the reverse lowered for full gr birds. The roof is sh turned back for fi with mash.

CUT HERE

COUPON FOR FREE 14 LB. BAG FUL-O-PEP

We will send carriage paid *either* one 14 lb. bag FUL-O-PEP Laying Mash (sold at 3/3) *or* one 14 lb. FUL-O-PEP Growing Mash (sold at : /7) and one All-age Self Feeder (sold at 7/6 each) on receipt of this coupon and Postal Order for 7/6.

As the regular price of these Feeders is 7/6 you see we give you the 14 lb. bag of Ful-O-Pep

This Coupon only good if received by us on or before June 20, 1925.

To FUL-O-PEP Dept., QUAKER OATS Ltd., 11, Finsbury Square, LONDON, E.C

5—6/25

Please send Carriage Paid—ONE ALL-AGE FEEDER and
14 lb. Bag of Ful-O-Pep Growing Mash } *Strike out kind of*
14 lb. „ „ „ Laying „ } *Mash not required*
for which I enclose P.O. for 7/6 as per your offer.

Kindly write very clearly and in Capitals.

NAME ....

ADDRESS ....

....

When sending P.O. make note of number and date so that it may be traced if lost in post.

As this is a very special offer we cannot accept more than one coupon from the same person or address. Our offer applies only to England and Wales.

FUL-O-PEP LAYING MASH Quaker Oats Ltd LONDON E.C.2

FUL-O-PEP GROWING MASH Quaker Oats Ltd LONDON E.C.2

EGGS

THE OFFICIAL ORGAN OF THE

Scientific Poultry Breeders' Association

WEDNESDAY, JUNE 10th, 1925.

Editorial.

EARLY MATURITY AND FUTURE PRODUCTION.

It is many years since that attention was drawn n these columns to the correlation between early naturity and high fecundity. It has been suggested on more than one occasion that close bservance of this fact would enable those who vere unable to trap-nest to considerably improve heir flock average by ringing all those pullets vhich first came into production. It is not suggested that this would mark them definitely as uture breeders, but it is from these birds that uture selection could be made with a much smaller nargin of error than if the whole flock were culled. t is of some advantage to know that pullets which re first to feather down the back are, in 90 per ent. of cases, the best layers.

It does seem a little curious that the average oultry-keeper, even when he is aware of this fact, oes not put it to profitable use. Some experinental work in the direction of ascertaining the ifferences in the egg-producing powers of the arly and late hatched pullets have been made in he States, and it has been conclusively proved hat the early pullet not only laid many more eggs, ut laid fewer small eggs, gained greater weight, nd suffered less mortality than their later hatched isters. Mr. Buster remarks on this in an article ublished in "Poultry Science."

In one test, two flocks of White Leghorn pullets ver 1,200 in number were segregated into two roups, on the basis of physical development and exual maturity; the two flocks were segregated nto approximately equal numbers of early and late naturing pullets. The total number averaged ,171 for a five-months period, 493 in the early naturing group, and 678 in the late. During the ve months period the early maturing pullets laid 8.5 eggs each, as compared with 24.4 for the te maturing.

A similar test was made on a larger scale for ne year. Seven flocks, comprising 6,084 pullets, our and a half to six months old were selected, on ne same basis as the above, and an attempt was nade to determine what percentage of late naturing pullets might profitably be culled from ommercial flocks. The flocks were segregated as follows: Five comprising 3,976 pullets were segregated into two groups, 1,955, or 49 per cent., in the early maturing, and 2,021, or 51 per cent., into the late maturing group; two flocks comprising 2,107 pullets were segregated into three groups, 704, or 33 per cent., in the early maturing group; 802, or 38 per cent., in the medium maturing group, and 601, or 29 per cent., into the late maturing group.

Four of the flocks which were divided into two groups were held for ten months. The first table gives the results for four flocks segregated at an average age of five months. There were 1,716 pullets in the early maturing group and 1,841 in the late maturing:—

EGGS PER PULLET.

Month.	Early.	Late.	Difference.
September	5.0	.8	4.2
October	7.5	3.2	4.3
November	7.4	6.4	1.0
December	10.0	9.4	.6
January	15.2	14.6	.6
February	15.3	13.9	1.4
March	18.8	16.8	2.0
April	18.2	13.8	4.4
May	19.0	12.4	6.6
June	15.2	12.3	2.9
Totals	131.6	103.6	28.0
Average Mortality ...	14 p.c.	20.0 p.c.	6.0 p.c.

It will be seen that not only did the early maturing birds lay more eggs, but they laid best when prices were higher, and they continued in lay longer, while there was considerably less mortality.

We now come to the second table, which gives a more striking difference, the pullets being divided into three sections—Early, Medium, and Late. There were 690 "Early," 779 "Medium," and 570 "Late" in maturing respectively:—

EGGS PER PULLET.

Month.	Early.	Medium.	Late.
September	11.5	2.2	.3
October	12.5	8.6	2.6
November	14.5	12.6	10.3
December	12.9	11.3	10.1
January	13.4	13.5	11.8
February	14.2	13.1	12.2
March	16.0	15.1	12.5
April	15.5	15.0	11.5
May	14.7	13.0	10.0
June	13.8	9.8	9.6
Totals	141.0	114.2	90.9
Average Mortality ...	3.6 p.c.	5.3 p.c.	9.0 p.c.

It is interesting to note in studying these tables that in no months did the late maturing pullets lay so many eggs as the early maturing groups, except in January, when the medium flock laid one-tenth of one per cent. higher than the early maturing group. The late maturing groups laid consistently fewer eggs.

When the birds were "culled" at the end of the season, only 12.8 per cent. of the early maturing flock were rejected, while 30.8 per cent. of the mediums and 40.2 per cent. of the lates were rejected. Further half of the late maturing group, which had been selected as breeders died before August 15th. This, to quote Mr. Buster, "indicates lack of sufficient vitality to maintain heavy production, contrary to favourable indications at the time they were culled."

The article is of interest and importance, as it demonstrates that the early maturing pullet not only actually produces more eggs, but produces them when prices are higher, and possesses greater vitality than pullets slow in maturing. We feel readers will agree that greater importance should be attached to the early maturing factor. Closer observation on this point would be of immense help to the commercial egg farmer who is not able to trap-nest, and would be a safer guide to him than the more general practice of selecting the late-moulter. One must, however, avoid extremes, and distinguish between early maturity and precocity.

SIXTH MIDLAND LAYING TEST.

Leading Pens in Each Section. Seventh Month, 196 days, ended May 17th, 1925. (Four Birds per pen).

White Leghorns.—Arthur Snowden, Crosshills, Yorks., 502 eggs; T. Baillie, Rothesay, Scotland, 484; Capt. C. F. Holford, Ludlow, 478.

White Wyandottes.—J. Dowden, Heathfield, Sussex, 515; Misses Argles, Alton, Hants, 494; M. F. Phelan, Northam, Devon, 492.

Rhode Island Reds.—K. A. Crawford, Dilham, Norwich, 463; Mrs. Athol Stuart, Boxmoor, Herts, 449; L. A. Cooper, Footherley, near Lichfield, 451.

Light Sussex.—F. R. Welch, Bewdley, 439; C. L. and J. A. Thomson, Holywell, Flintshire, 423; W. H. Brady, Penmaenmawr, 440.

A.O.V. Light Breed.—E. Thomas, Sartrouville, France (W. la B.), 440; Blaksley and Blythe, West Moors, Dorset (Bl.L.), 375; G. H. Rayner, Grantham (Bl. L.), 367.

A.O.V. Heavy Breed.—H. W. Gee, Lickeys, Bromsgrove (Barn.), 424; F. R. Welch, Bewdley (Bf. R.). 327; J. Gordon Herbert, Newent, Glos. (Barn.), 326.

Single Bird Section.—J Small, Edgbaston (Bl. L.), 135; F. Nicholls, Alvechurch, Birmingham (W.W.), 133; F. A. Rann, Shackerstone, Nuneaton (B.L.), 129.

THE MIRFIELD AND DISTRICT POULTRY-KEEPERS' ASSOCIATION LAYING TRIALS.

Seventh Monthly Report.

The Seventh Monthly Period closed on May 10th. The health of the flock has been good. There has been one death during the month (Pullet No. 170), owned by Mr. J. W. Brown, Heckmondwike

SUMMARY OF LEADING PENS.

White Leghorn, Pen Section (Three Birds).—Mr. N. Firth, 255 pts.; Mr. W. Horsley, 253; Mr. E. G. T. Ermen, 219.

Any Other Variety, Light (Two Birds).—Davey and Sons, 158; Mr. H. Poole, 122; Messrs Ledgard and Brown, 117.

White Wyandottes, Pen Section (Three Birds).—Mr. R. Scott, 263; Mr. E. G. Ermen, 251; Messrs. Ledgard and Brown, 220.

Any Other Variety, Heavy (Three Birds).—Mr. W. Horsley, 353; Mr. P. Furness, 293; Mr T. E. Burnett, 239.

White Leghorn (Single Bird).—Messrs. Ledgard and Brown, 102; Mr. A. Blackburn, 101; Mr. W. Horsley, 100.

Any Other Variety (Single Bird).—Sykes Bros., 89; Mr. F. Elmour, 71; Messrs. Ledgard and Brown, 56.

White Wyandotte (Single Bird.—Mr H. Crowther, 108; Mr. A. Whiteley, 106; Mr. A. Blackburn, 105.

Any Other Variety Heavy (Single Birds).—Mr. E. Saxton, 88; Mr T. E. Burnett, 83; Mr. A. Sykes, 82.

Modern Poultry Feeding.

By **TOM NEWMAN.**

THE ALBUMINOID RATIO.

I have received a letter from a correspondent wh writes as follows:—

> "I wish I understood something more of th rules governing feeding. I have studied tables o analysis, and they do not agree in many case even approximately. Although a laying hen i agreed to require an albuminoid ratio, rangin from one to four to one to five, what ratio does chick or growing pullet, or fattening cockerel, o breeding stock, or moulting hen require?"

This is a difficulty which bothers many beginners The old teaching was that by working out the albuminoid ratio you arrived at a balanced ration, am this was firmly believed until we pointed out the mistake in these columns. You cannot arrive at balanced ration by calculating the albuminoid ratio An analysis of the body of a fowl would show that i is composed of protein, fats, carbohydrates, minera matter and water. About 70 per cent. of the bod weight is composed of water. It will be seen ther that these are required by the laying hen, the breeding stock, the growing chick, but they all require them fo a different purpose. With regard to the fattening we do not want to trouble about a ratio, we merely want a mixture of easily-digested foods, rich in fat and carbohydrates—our table of analysis will give us that.

The laying hen will put any surplus above what she requires for bodily maintenance to egg production, but although we may start her on a balanced ration of, say, 1 to 4½. 5, which is generally recommended, we shall find that more eggs will be produced on a much broader one, for the prolific layer will draw freely on her bodily reserves of fat, and experiments made years ago demonstrated that the wider the ration the better the production. With the laying hen we have only to feed for egg production, and to see that the ration is sufficient for this purpose and bodily maintenance. In answer to many questions the following is given once again as the cheapest mash which can be fed at the present time consistently with good results:—2lbs. Bran, 4lbs. Middlings, 2lbs. Maize Meal. ½lb. Meat and Bone Meal, ½lb. Soya Bean Meal.

If wet mash feeders desire to use up small potatoes they can use them in place of the maize meal, and cabbage of any kind could be used in place of the bran. If that is done don't forget to make good use of the water in which it is boiled.

With the growing chick we have a somewhat different proposition. It is a question of maintenance on the one hand and healthy development on the other. Maize will not help us to build up a frame, and further it has the disadvantage of bringing forward ullets into production too early. The oat is much etter for our purpose, and the following will be found good growing formula until it is time to put pullets n to the laying mash, say at the beginning of Sep- ember, or when they are five months old. I am epeating all these formulae at the request of many of ur readers:—2lbs. Bran, 4lbs. Middlings, 1½lbs. ussex Ground Oats, ½lb. Maize Meal, ½lb. Meat and one or Fish Meal, 1lb. Alfalfa Meal. The latter is ot necessary if there is plenty of green food.

For the breeders the following mash will contain all e constituents necessary for the production of the atchable egg. I am quoting from a letter received om the Rev. Canon Childs-Clarke, not to blow my wn trumpet, but to give you confidence in it. He ys:—

> "I have fed my breeding pens and reared my chicks on your formulae. I have sold dozens of sittings, and have only heard of four clear eggs, and have only had one among those I have incubated. Of the chicks on my own farm I have only lost one, which I killed, as it was suffering from constipation. I have no cases of B.W.D. or Coccidiosis. I attribute this rather remarkable success entirely to your formulae."

Wouldn't this be a splendid testimonial if I were in e trade? but then I am not, and so I can afford to mit that this success could not have been entirely e to my formulae. Of course if there had been any- ing wrong with the mashes, Canon Childs-Clarke uld not have written that letter, but the best feed- g in the world will not compensate for lack of tality in the stock, or bad management in other spects. To get on, the breeding formula is as llows:—1lb. Alfalfa Meal, 1lb. Broad Bran, 4lbs. iddlings, 1lb. Sussex Ground Oats, 1lb. Maize Meal, b. Dried Yeast or Soya Bean Meal, ½lb. Meat and one Meal or Fish Meal.

To every 10lbs. of this mash add 5ozs. of the fol- wing mixture:—60 parts Bone Meal, 20 Common lt, 20 Powdered Oyster Shell. This can be used as wet or dry mash, but if wet do not scald the bran, e it to dry off the other ingredients.

With regard to the moult, it is not a question of the uminoid ratio at all. The first thing to do is to ep the birds in a bodily condition to moult. A n which has laid heavily and drawn heavily on her dily reserves of fat will, as a rule, moult badly. I ve never had trouble with the moult, and I attri- te it largely to the fact that for many years past I ve fed heavily with maize as the grain feed the ole year round. In cases where birds hang in the ult, this course should be followed, while the addi- n of four per cent. linseed meal to the mash will p considerably. There should be a plentiful supply fresh green food, and the birds should be sheltered m the hot sun.

The following will be found a useful mash for fat- ing, especially if mixed with sour skim milk:—Fine ite Middlings, three parts; Sussex Ground Oats, part; Barley Meal, one part; White Maize, half t, Meat Meal, quarter part. The meat meal is not essary if skim milk is procurable.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

A FEW QUESTIONS.

I have a letter from a member who has lost a large number of White Leghorn chicks from Coccidiosis, and he, for this reason, is tempted to try cross-breds next season. In the first case he asked me which cross I would recommend, and my suggestion was White Leghorn and Light Sussex.

Now we come to all his questions:—

> (1) "Are Light Sussex easier to rear than White Leghorns?"

To this question I was compelled to answer "No." Then, as to the hatchability of the eggs. Of course, there are individual differences—difference between strain, but on the average I should say the Light Sussex were quite as hatchable as the Leghorn.

His third question is:—

> "Would a Light Sussex-White Leghorn cross be suitable for running in a large flock of five to six hundred?"

I have never tried this, and could not give a definite answer, but on the whole I should not like to run such a large-sized flock with this cross, and would prefer not to do so with any cross or breed.

Then he asks:—

> "Could he get a pullet flock average of 170, and a second-year average of 130 eggs from such a cross if the parents were properly selected and the cockerels from trap-nested Leghorn hens?"

This is quite possible, and my reason for suggesting this cross is because I have found it one of the best layers, quick to mature, and the cockerels, of course, are excellent table birds.

Then follows the question about broodiness in the cross-breds. The answer to this is: "You will always get broodiness in cross-breeds unless you cross two non-broody breeds.

Now we come to his losses in chicks this year. He asks:—

> "If part of my heavy losses are due to B.W.D., and part to Coccidiosis, would you recommend me to have my future breeding stock tested out?"

There is no test for Coccidiosis, and the question as to whether it is inherited or not is a debatable one. The B.W.D. Test we know to be fairly reliable, but we must emphasise this point that one single test is not sufficient. That is to say, that if a breeding pen is tested in December, and proves negative, it does not follow that if they were tested in March one or two of them would not react, and these birds would, of course, be carriers.

His sixth question is:—

> "If I were to have it done could I be sure that even if tested out and passed the hens would not contract B.W.D. from germs in the litter or the ground?"

I cannot answer this question. As far as I am aware the means by which the disease is contracted by adult stock are not known.

His seventh question is:—

> "If I have pullets from blood-tested parents could I be sure that they would not contract B.W.D. in their pullet-hood?"

I feel I can only answer this by saying he would not be sure.

His eighth question:—

> "Is the B.W.D. Test worth while, or is there a better treatment?"

Yes, most decidedly the B.W.D. Test is worth while, but he must understand that it is a test and not a treatment. Therefore, the question as to a better treatment does not arise.

Now I have answered all these questions to the best of my ability. What it has been difficult to make my correspondent understand is that cross-breds are no more immune or resistant to B.W.D. than pure breeds, and the same remark applies to Coccidiosis.

Several examples have come to my notice during the season. Of course, one would not expect a cross-bred to be more resistant to Coccidiosis than a pure bred.

With regard to the value of the Blood Agglutina-Test I can only repeat that I am assured by the best authorities that it *is* reliable, but that one test is not sufficient, and that breeding stock should be tested at least every six months.

THE LATE-HATCHED CHICK.

Many explanations have been given as to the reason why the late-hatched chick does not develop so quickly and healthily as its earlier hatched brothers and sisters. I take the following from the "Poultry Tribune." Whether the explanation is correct or not I cannot say. Personally, I believe it arises from other causes, more particularly to the fact that the egg from which the chick is hatched is not such a good one.

It must be admitted that in the longer days the chicks take a great deal more exercise, and this would compensate for any difference as to digestion there might be caused by the warmer weather, and the less food needed to maintain body heat.

If it were merely a problem of digestion it would not be insolvable:—

WARM WEATHER FEEDING.

> "Most people have more trouble with their later hatched chicks than with the early chicks. This is due to the fact that as the days become warmer, less feed is needed by the chick to maintain body heat.
>
> The digestion becomes less active, therefore the chicks are in greater danger of over-eating and clogging the digestive tract than the early hatch chick, which has cooler weather to contend w during its most critical period."

TRAP-NEST RECORDS.

Mr. Edgar Watson writes as follows:—

> "Dear Sir,—In this week's "Eggs" Mr. W. Golden says he believes the record for a pen of birds in this country is held by a pen of Wh Wyandottes (Mr. E. Cam's) with an average 249 eggs per bird.
>
> My pen 98 White Wyandottes won the G Medal, Harper-Adams' College, 1915-16, with average of over 252. Official 12 months."

And now please we will let the subject drop.

COUNCIL MEETING.

The Monthly Meeting of the Council was held the Memorial Hall, on Wednesday, June 3rd.

Present:—Mrs. Hunter (President), in the ch Miss Maddison, Messrs. J. G. Kitson, J. Smart, E. Hamlin, Lester Spurgeon, R. Fletcher Hearnsha, E. Bostock Smith, J. H. Dowden, the Treasurer a Secretary.

Minutes of the previous meeting were read, co-firmed and signed.

Secretary's Report.—The Secretary reported t 123 new members had been elected during the mo of May. This was a record for the month. T membership of the Association was now higher th it had ever been before.

Treasurer's Report.—The Treasurer submit his report, which showed that the Association was a flourishing financial position. Mr. Fletcher Hea-shaw, moving the adoption of the report, which w seconded by Mr. Kitson, congratulated the Treasu on the report.

International Show.—It was agreed that a sta should be taken at the International Show at Crystal Palace, to be held in November.

"Eggs" Committee Report.—Mr. J. G. Kits, Chairman of the "Eggs" Committee, informed Council that the circulation of "Eggs" was stea, and that financially they were in quite a satisfact position.

Wellingham Experiments.—The Secretary inform the Council that the Wellingham Experiments h proved a very great success, both the Feeding Exp-ment, with the 100 Light Sussex Chicks, and Intensive Experiment. He had visited the farm w Mr. Meekings, and found all the birds in perf health and condition. He suggested, with regard the Intensive Experiment, that some useful w might be done if they tested the effect of trou-feeding the grain as a prevention of the partial mo If the Council would agree he would like to see birds given as much grain (kibbled maize) as th cared to consume, as the last feed at night, after l ing had commenced. This would be trough-fed, the dry mash would be fed as usual, always bef the birds.

Mr. Hearnshaw suggested that it would be interest- g if the birds were divided into two flocks, and one ceived this additional trough-fed maize, and the her not. The Council unanimously agreed to the cretary's proposals.

National Poultry Parliament. — The Secretary ferred to the National Poultry Council Meeting at arrogate. He stated he had received a resolution, ich had been drafted by Mr. Dowden, as to the mmercial training at authorised teaching institu- ms. He read the draft of the resolution, which was follows:—

> "That in view of the fact that so many of the present-day failures in the Poultry Farming Industry are directly attributable to a lack of true business knowledge, it is recommended, in order to rectify this as far as possible, a course of Commercial Training be added to the Curriculum of our Authorised Teaching Institutions, and that where such a course is already included, that this should be intensified. Further, that such course to include a Standardised system of arriving at costs of production and maintenance. And that a Committee be appointed to make recommendations for the inclusion of such courses, to the proper authorities."

It was agreed that this should be moved by Mr. owden, and seconded by Mr. E. Bostock Smith.

The Secretary asked the Council to approve of the lowing resolution which he proposed moving at the eting of the National Poultry Council:—

> "That having regard to the heavy losses sustained by poultry-keepers from roup, in its various forms, it is advisable that a small Conference or Commission of Research Workers and Practical Breeders, should be appointed with a view to advising the public as to the best means of combatting the disease."

He said the position was becoming serious. He not suggest for a moment that such a Committee rld do anything which would be immediately ective, but they had to think years ahead, and in opinion it would be a matter of evolution and not olution. He indicated some of the lines on which thought the investigation might take place. The uncil unanimously approved of the resolution.

The President informed the Council of her visit Brussels as representative of the S.P.B.A. at the nference of the National Federation of Aviculture, object of the Federation being to group the tional Federations and Associations to assist in the rld Development of the Scientific and Technical erests of Aviculture.

Mr. Fletcher Hearnshaw proposed a vote of thanks the President for attending the Conference. He it was important that the S.P.B.A. should be resented there, and it was fortunate that Mrs. nter had attended, as she was the only British presentative, owing to Mr. Clem Watson being ained by fog.

(Continued at Foot of Next Column).

The Hen and Incubator Combination.

Yes, I read it in "Eggs," and Mr. Newman said it, that when eggs were put under a hen for several days, and then transferred to an incubator, the hatching results would be as good as when left under the hen all the time of incubation. Also, when started in an incubator and finished under a hen, there would be no better results than if left in the incubator.

With the second part of the statement I am not interested, and am quite willing to take Mr. Newman's word for it. However, the first part seemed sufficiently interesting to give it a fair trial.

Transferring to an incubator gives a good opportunity for toe-punching, which is impossible under a hen when eggs from different birds are being incubated, and it is not the most pleasant thing for the operator or the hen to test for unfertiles at night.

The experiment was tried with a 25-egg Hearson incubator, with very satisfactory results, nearly every fertile egg hatched when placed in this machine, but results were not so good in the few instances when the eggs were put in a larger incubator. Probably the thermometers are faulty.

Some trouble was experienced in the hen part of incubation with eggs broken in the sitting boxes during the early clutches. This naturally meant smaller hatches, and the first two hens got chicks of two ages. They had fifteen each, and reared twenty-seven out of the thirty.

To test for fertility in the different pens—
January 18th.—Started the 25 Hearson incubator.
January 22nd.—Set Hen "A."

The Council unanimously agreed to the vote of thanks.

Mr. J. H. Dowden proposed, and Mr. Bostock Smith seconded, a very hearty vote of thanks to Mr. Hamlin for his services to the Association, and his promise to give legal advice through the columns of "Eggs."

Mr. Hamlin, responding, said it was a very great pleasure to help the S.P.B.A.

The date of the next meeting was fixed for Wednesday, July 8th.

FOOD PURCHASE SCHEME.

Mr. G. Beecham, Clifton Road, Bowers Gifford, Pitsea, Essex, writes to the effect that he is quite prepared to form a group in the food purchase scheme if members resident in the district will communicate with him.

January 30th.—Set Hen "B," and removed unfertiles from incubator.
January 31st.—Put eggs from Hen "A" in incubator and gave her a second lot.
February 7th.—Set Hen "C."
February 8th.—Incubator hatched out, gave chicks to Hen "A" and transferred her second lot to the incubator.
February 12th.—Hen "A's" first lot hatched and were added to the chicks she had already had from the incubator.
February 13th.—Hen "B's" first lot went into the incubator and she received a second clutch.
February 17th.—Gave Hen "C" a second sitting and transferred her first lot to another incubator as the 25 was full up.
February 20th.—First lot of Hen "B" hatched out.
February 21st.—Second lot of Hen "A" hatched out, gave both lots to Hen "B" and put her second clutch in incubator.

The first sign of getting in a hole with the experiment occurred about February 24th, when Hen "C" was found to be in a bad state and likely to die. Her eggs—second lot were removed to the incubator, but failed to hatch. However, she was doctored up with some patent medicine, supposed to contain malt, cod liver oil, and many other things. It did the trick, and she recovered in time to take on the chicks from her first lot of eggs, which hatched out on February 28th. To keep the idea of incubation alive in her mind she had a few crock eggs under her during the time of indisposition. She also kindly obliged by taking on, in addition, the chicks from Hen "B's" second lot on March 6th.

Four more hens in March and six in April were put down; they all had either two lots of eggs or were given a brood of chicks before the full time of sitting was up. One hen was on goose eggs for two weeks, but as they were all unfertile she had chicks instead. Another sat on ducks' eggs for three weeks, and then got a brood of chicks.

By the end of April the housing problem was becoming very acute, the number of coops being rather limited, and they were continually being wanted for fresh families. The largest hens had to take in lodgers, and foster-mothers had to be used as cold brooders, as soon as it was possible to remove hens from the chicks.

Taking the experiment all through it has well repaid the extra trouble, but poultry-keeping would be a rather monotonous affair if we were not Athenians in a small way—telling, hearing (and trying) some new thing. Next hatching season I hope to try further experiments to see if one week or even less will give as good results. This would give three or four lots of eggs from each hen, several hens broody at the same time would help considerably, as the eggs could be changed on the same day and so get enough chicks out on one date to rear in a foster-mother.

Dr. Rosedale has also tried this scheme, and he tells me that he has changed the eggs every seven days, and has found it to be sufficient.

Is it possible that the so-called "hen oil" makes all the difference in hatchability? Does it prevent too quick evaporation, or does it absorb the carbon dioxide? The shells from all the eggs hatched in both experiments have been saved and taken to the laboratory by Dr. Rosedale. The oil will be extracted and analysed.

HANTS COUNTY LAYING TRIALS.

REPORT OF EIGHTH PERIOD, ENDING 26th MAY, 1925.

Figures are Eggs for period, and Grand Total to date respectively:—

Section A.—Mr. H. R. Hunter (W.L.), 69, 3598; Mr. A. F. C. Holdaway (W.L.), 73, 3484; Capt. Munro Spencer (W.L.), 83, 3284; A. F. C. Holdaway (Pen 2) (W.L.), 42, 3187; Mr. R. Mackenzie (W.L.), 65, 3054; Capt. P. H. Harper (B.L.), 84, 3036.

Section B.—Mrs. J. H. Drew (B.R. Util.), 70, 4140; Mr. R. McKenzie (W.W.), 66, 3245; Capt. D. W. Gunston (Pen 2) (W.W.), 66, 3193; Mr. J. B. Thompson (W.W.), 55, 3035; Capt. D. W. Gunston (Pen 1) (W.W.), 49, 2981; Mr. H. R. Hunter (R.I.R.) 49, 2976.

What our Readers think of "Eggs."

42, Cherry Street, Birmingham.

Dear Sir,—I may say I am a regular reader of "Eggs," which I consider is the best paper published on poultry matters.

Yours faithfully,
(Signed) A. B. BRADLEY.

Menadews, St. Clements, Truro.

Dear Sir,—"Eggs" is packed full of information from cover to cover, and contains more practical information than any two contemporary journals.

Thanking you, yours faithfully,
(Signed) L. CHOAK.

Chesterton Hall, Cambridge.
24th February, 1925.

Dear Sir,—Thank you so very much for your most kind letter of advice. I shall at once act on it. I never expected a letter back, but thought in the far future I might see a reply in "Eggs." It is wonderful to feel that in a real emergency one could get such help.

Gratefully yours,
(Signed) (Mrs.) MABEL PIERCE.

9, Rockvad Terrace, Dumbarton.

Dear Sirs,—Please find enclosed P.O. for 1s. 3d., being price of the book "One-Man Poultry Farming." I must mention, in writing, my appreciation of your paper. "Eggs." I think it has no equal in poultry journalism. Hoping you can supply book, and wishing you every success.

I am, Sir, yours truly,
(Signed) H. P. REYNOLDS.

Answers to Queries.

By the EDITOR.

DUCKS.

w. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

BODIES " for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

dies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

aders are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

plies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).

L questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

C. C. R. (Andover) asks, when lighting takes ace in winter, and the annual output is not in- eased, whether I could tell him when the de- ease in the egg yield takes place—in the spring, do they moult earlier? This would make a nsiderable difference in the comparison of profit d loss. From what statistics I have collected I d that the output during the spring months is t so great. There is no evidence that the birds y earlier, but there is not that natural increase eggs during the spring months which usually kes place with the increased length of day. My rrespondent says, "You have never dealt with e paragraph on whether a pedigree is useful, and hether a list of descendants is what is required, Punnett's 'Mendelism.'" I am afraid that is o big a subject to deal with in these columns, so will endeavour to answer it in another column. cannot, however, yet find the paragraph to which refers.

A. K. K. (Newcastle) has trouble with broodi- ss. His White Leghorns of a well-known strain e repeatedly broody, and he wants to know why is should be and how to prevent it. I can only ggest that the cause is some outcross with a oody breed a few generations back; this was sorted to by a good many breeders in order to prove stamina, both the White Rock and the yandotte were used. As to preventing it, the ly thing to do is not to breed from broody lividuals. There have been several complaints to broodiness in White Leghorns this season. his second question, as to poor results, and the advisability of breeding from his March-hatched Wyandottes, perhaps he will send me more particulars. I cannot understand why these pullets should not have laid before December, and it would seem there must have been something radically wrong in the management; either this, or they could not have been from a pen as advertised by the breeder.

Senor (Halifax) is bemoaning the cost of feeding which does not permit a profit at present prices of eggs. His mash is as follows :—Alfalfa meal (18s. 6d.), bran (11s.), one pound each, Sussex ground oats (20s.), biscuit meal (27s.), meat meal (24s.), one pound each, and thirds (12s.) 4 lbs. He wants to know whether I can cheapen the mash for him. He is buying badly, and samples are not value for money. At this season of the year, when so much fresh green food is available, alfalfa is unnecessary, and he should not pay more than 16s. per cwt. The ground oats are very dear at 20s., and biscuit meal an uneconomical food at the price. The sample of meat meal is not worth more than 18s., and he would do better to use a good sample of meat and bone meal. The following mash will be much cheaper, and will give equally good results :—2 lbs. of bran, 4 thirds, 2 maize meal, half soya bean meal, half meat and bone meal. See that the percentage of bone in the latter is not excessive. This is a layers' mash, and should not be given to breeding or growing stock.

Anxious (Worcester) is losing a large number of chicks between three and five weeks old. Symptoms are drooping wings, crowding together, listlessness, and slight diarrhoea. It would have been so much wiser had he sent some for examination to Major Saunders, and may I point out to readers, that the ordinary post-mortem is farcical and misleading, unless there is experience, knowledge, and the proper facilities for making it. There is much more harm than good done. Several cases have come to my notice this season which would have been amusing had not the results been serious for these unlucky senders. In reply to "Anxious," I can only say there is good reason to believe that his chicks are dying from coccidiosis; in any case he would be wise to take the following precautions: Kill and burn at once all sick birds, move the others to fresh ground, and give 15 grains of powdered catechu to each gallon of drinking water, and allow the chicks nothing else to drink. Don't attempt to cure any sick chicks, they are incurable, and those which survive an attack are stunted in growth and never profitable. It is important to keep moving the chicks to fresh ground, as the egg of the parasite is voided by affected chicks, picked up by others, which in their turn are affected.

Perches (Suffolk) wants to know when chicks should be allowed to perch, and the best form of perch, a mash for growing stock until they arrive at the productive stage, a cheap mash for layers, and last, but not least, how he can prevent an outbreak of B.W.D. next season. Someone near him has had fearful losses from this cause, and, to use his own expression, he has got the wind-up. Your chicks should be induced to perch as soon as possible, as they will develop better, and be healthier than if allowed to huddle on the ground. Get some plasterer's lathes, nail them, eight or nine in a row, half an inch apart, 18 inches from the ground, spread a little hay on the top, and the chicks will soon perch. The following is a good mash for growing stock: Bran 2 lbs., middlings 4, Sussex ground oats 1½, maize meal ½, meat and bone meal ½ lb. Please see reply to "Senor" for a cheap layers' mash. The only possible means of preventing an outbreak of B.W.D. next season is to have your breeding stock blood-tested—that is not infallible, but it is as far as our knowledge of the disease carries us at present. If green food is short 1 lb. of alfalfa meal should replace 1 lb. of bran in the growers' mash.

F. T. (N. Wales) sends me a wonderful tonic which he wants me to try (on my fowls). It is guaranteed to improve egg production. He is certain of that, as his birds were laying poorly when he started it in January, and a fortnight later there was a decided improvement in the yield. He sends me figures to prove this, and desires me to make it known for the benefit of our readers. I am entirely unconvinced by what you say, "F.T.," and your figures prove more than anything else that your wonderful tonic has not the slightest value. A pennyworth of sulphate of iron would have given you equally good results, as it is your tonic only adds to the cost of producing the egg. The improved yield is entirely seasonal, and already the seasonal decline has started. Healthy fowls do not want tonics. A change of food, abundance of fresh green food, and well-ventilated houses will do all that is necessary. When hens are unhealthy, it is the conditions which are at fault as a rule. This tonic you send contains iron as the basis, the other ingredients are mere camouflage.

C. J. L. (Rosettenville) writes in reference to advice to start incubator at a temperature of 105 the first week, 104 the second. This temperature is with the bulb of the thermometer half an inch above the eggs. My correspondent states that "it seems strange to read last week in 'Eggs' the letter from Mr. Pollard, of Uitenhage, about the draught." In his part of the country they have had the wettest season he has known for thirty-two years, and it has been too wet to do anything. On the question of grading and marking eggs he says this is a serious question, but he thinks the societies could overcome a lot of trouble. The Transvaal Egg Circle buy the eggs of its members, or rather pay out by weight and then grade them for size and colour. Since he has been a member, which is six months, his eggs have always averaged over two ounces.

New Reader (N. Devon) is very complimentary to "Eggs," and wants to know the best way to force an early moult, as he is anxious to get eggs during September and October. It is easy to force an early moult, but it does not always follow that you will get eggs in September or October. I have never found any advantage from inducing this early moult, except in the case of exceptionally good layers, whose eggs I want the following breeding season, those are induced to moult in September. The best plan is to shut the birds in a warm but well-ventilated house, slightly reduce the food daily until the feathers begin to fall, and then put them on full rations again. You must take care not to get them into too low a condition, as this means a long moult and delay before they begin laying again. The sample of ground oats sent is fair average quality, but the meat meal contains too much bone.

Puzzled (Co. Wexford) has a different tale to tell, most of his pullets have gone into moult, and he is anxious to know why. A fortnight ago they were laying 60 per cent., then it dropped to 25, and now it isn't worth mentioning. The birds' appetites are poor, but otherwise they are fairly healthy. Their appetites would be poor if they are not producing and are moulting. I cannot say what is the cause of this sudden moult. Have the birds been frightened at all, has the food been changed, or is there anything wrong with the food? In the latter case there would be symptoms to indicate this, and I can hardly think it is so, as "Puzzled" does not mention it. There is also the possibility of the birds being slightly underfed and having got out of condition. It would be wise to give them maize as the sole grain food while they are moulting, and sulphate of iron in the drinking water. See, too, that they are not infested with insect pests, particularly red mite.

POST-MORTEMS.

C. The post-mortem examination of the hen showed that apoplexy was the immediate cause, but this was no doubt secondary to excessive straining in the endeavours to lay a soft-shelled egg that was found in the uterus. The conditions found in this bird, and the history of the passing of soft-shelled or shell-less eggs by others, indicate that there has been over stimulation of the ovaries, resulting in premature expulsion of the ova, and interference with the synchronisation of the ovary and uterus. All foodstuffs that tend to excite the ovarian functions should be eliminated from the diet until normal eggs are again laid; the foods chiefly responsible are maize and fish or meat meals, and, of course, anything in the nature of spices or laying tonics not permitted.

P. R. P. The most close and careful examination both for gross post-mortem lesions, and microscopically for organisms, failed to detect the pre-nce of coccidiosis in any of these chicks. The ouble this time, as shown by the conditions und, viz., congested livers, full galls and choked dneys, is, in my opinion, due to a rather too imulating ration and over-generous feeding, pecially in regard to animal food. Apart from is the birds were healthy and well nourished, and think a reduction of the ration, a supply of green od, and a few doses of Epsom salts in the mash drinking water should put matters right. I ould, however, not relax the sanitary pre- utions already taken, in view of the past out- eak of coccidiosis. Birds of all ages are subject infection, but young ones are most susceptible, d the disease more likely to become epidemic nong them than in adults.

F. D. The post-mortem examination of the .L. chicks showed that they were affected with ccidiosis. Judging by the extent of the lesions, ese birds have only quite recently become in- cted, certainly not before hatching. In these tter cases death occurs in a few days after tching, the lesions being very well marked and vanced. In cases of recent infection there are ten no naked eye lesions, the use of the micro- ope being necessary to establish a definite agnosis of the disease. The absence of arrhoea in the subjects among the W.Ls. is an dication of the acuteness of the infection, death king place before that symptom has time to velop, or extensive lesions to be produced in the eca. I should advise the same sanitary pre- utions and the same line of treatment to be llowed as in the former outbreak.

H. R. The trouble in the mouth and swelling as due to injury and not roup as you feared. ere was a punctured wound in the roof of the outh, and another on the jaw, in which the usual mi-solid pus of birds was present. This cheesy s is easily removed from cavities and wounds, e diphtheritic deposits of roup being so only with fficulty and leaving behind a raw and bleeding rface. The answer to your query re chicks tched from eggs of a tubercular hen is no, unless ey come in contact with infection, and then no ore so than others.

A. M. In reply to your letter, dated May 31st, 25, there is no doubt of the trouble being htheritic roup, and if you had slit up the wind- es of those that died suddenly, you would have und a plug of the deposit blocking the larynx. is was the case in the bird that I made a post- rtem on, and is quite commonly the cause, and failure to find yellow patches on the mouths throats does not dispose of the disease being esent. Your cases have, indeed, been of a mild scription, but at any time the trouble is likely become more virulent, or change its type to her the catarrhal or ocular form, or both. The mary cause of roup is the same whatever the symptoms are, these being determined solely by whatever secondary invading germs find entrance. I am afraid that unless you take the cases of "mouth canker" more seriously that casualties will continue to occur, and more alarming signs of the infection manifest themselves.

B. M. E. M. The post-mortem examination of the ducklings (3) showed that the cause was cerebro-spinal meningitis, which, from the numbers of aquatic birds that it carries off, there is every reason to suppose to be infectious, although up to the present time no definite organism has been incriminated. Death usually occurs so suddenly that there is no time for treatment, which would only be empiric at the best, but good reports have been received of sodium hypo-sulphite mixed in the food as a means of prevention. The dose recommended is five grains per head twice daily, dissolved in the water that is used to mix the mash with, and where there is any reason to suppose that the disease is likely to appear, should be given from the start. I have been successful in isolating a bacterium in pure culture from the brains of two subjects, but it is too soon yet without a lot more investigation to say how far this germ is responsible, if at all.

A. H. L. C. The two turkey chicks were badly affected with the Aspergillus fungus, the lungs being riddled with nodules. The infection is mostly spread by litter and foodstuffs that have become moulded by attacks of the fungus, but the latter will also grow and produce its spores or seeds on any damp materials. The litter should be constantly swept up and burned, and the floors of the houses, etc., disinfected twice weekly with strong **fluid** disinfectants. Only food or litter that is entirely free from even a suspicion of mustiness should be used, and any odd articles that might form a suitable nidus for the fungus removed from the house or runs. The disease is resistant to treatment, but unaffected birds may be fortified to resist infection by the addition of 2 per cent. of cod liver oil to the mash, and forty grains of citrate of quinine and iron to each gallon of the drinking water.

Aroadia, Gaoomon's Lane, Watford.

Dear Sir,—At the same time I desire to take this opportunity of expressing my great appreciation of "Eggs," and the many useful articles, formulae, etc., which appear in its pages from week to week. I am sure, as a poultry paper, it stands out above anything that has ever come to my notice, and it is always a matter of astonishment and regret to me that **every** person interested in poultry-keeping is not a regular reader. I think this may be largely due to the fact that there are many people who do not know that your excellent paper exists, and if you care to send me down a parcel of old numbers, I shall be pleased to distribute these in the neighbourhood, and do what I can to interest others, and so increase the circulation of what I consider to be the best periodical published on fowls and kindred matters.

Wishing you increased prosperity for the Association and "Eggs."

Yours faithfully,

(Signed) H. W. SMALLMAN.

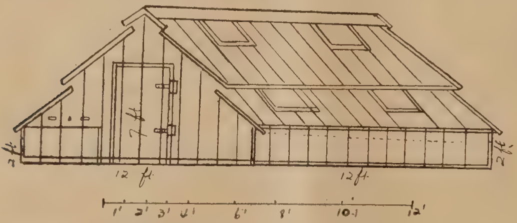
Correspondence.

APEX HOUSES.

To the Editor of "Eggs."

Dear Sir,—I have read with interest the various letters and articles appearing in your magazine with regard to the Apex house. I am a poultry-keeper with a fairly large flock of birds, and make all my own houses and supply a local demand. I have invariably made the old-fashioned ridge house, but to save timber and yet give the same floor space I have designed a new make of house. This house, I maintain, is much superior to the Apex, while in many respects it resembles same. I enclose a rough sketch of same, and shall be glad if you will kindly publish same with this letter in your next edition.

The house is slightly less than the Apex described in your 28th January edition, but it is the size of a house I am about to build. I have also drawn a copy of an Apex house of the same dimensions. The floor space is, of course, exactly the same with one advantage, the dropping board while of the same width does not come into the centre of the house. Further, the whole of the ground floor can be used for scratching, whereas in the Apex the birds cannot get within at least a foot of the sides on account of the slope of the roof.



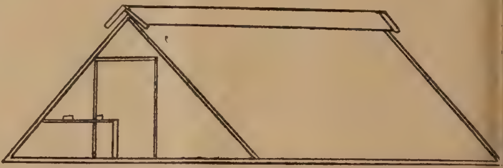
Sketch of "Apex" House (No. 1).

My design requires something like 64 square feet more wood than the Apex, but for this extra outlay you obtain a much larger air-space, which after all is the main consideration in the building of houses.

There are six skylights, which will give a sufficent amount of light. The ventilation, as indicated in the sketch, is by way of the roofing, being in two parts, the top portion being slightly higher than the lower one, with an overlap of some six inches. The ridge again overlaps the top portion by some six inches, allowing the foul air the necessary means of escape.

The house would be constructed of one-inch boards with two inch by three inch battens, the dropping board being constructed of the same wood. Roof would be covered with ruberoid. If one ran a length of spouting along either side ar let a barrel into the ground, there would be good supply of water for drinking purposes.

The whole of the advantages of the Apex h would apply to the one in the sketch with sever further advantages, i.e. :—(1) The whole of tl floor being available, as in the first paragraph my letter; (2) the water would get away quickl and would not be inclined to damp the grour inside the hut as quickly; (3) the roof would n be liable to rot as in the Apex, as it would n touch the ground; (4) the greater air-space; (and the drawback referred to in your corre pondent's letter of the 28th ult. would not apply.



Copy of an "Apex" Hut on same scale as Sketch No. 1.

If any of your readers are interested in this hu I would be pleased to hear from them and to gi them any further particulars, price, etc., whi they might require.

Yours faithfully,

JOHN ATKINSON

SALE OF EGGS.

To the Editor of "Eggs."

Dear Sir,—I have read with much interest M Burn-Murdoch's further letter in your issue of 27 ult., in reply to "Commercial Egg Farmer," ar my own comments on his previous letter.

By a well-thought-out scheme Mr. Burn-Murdo withdraws his supplies of new laid eggs when th price falls below 2d., and places them on th market later on (in their preserved form) **"at price that amply repays the cost of preserving pl at least 2d. per egg in addition."** So far, so goo

But Mr. Murdoch goes one further. He says, effect, that, given the necessary business acume and sufficient capital, every egg farmer might the same if he chose.

That part of his argument I fail to follow Having regard to those unlimited supplies of pr served eggs—of varying nationality—which floc the market during the winter months, "Squeezers'" prices, and those thousands an thousands of "housekeepers" who preserve f themselves—not to mention the general pra titioner farmer who habitually under-sells th specialist—I cannot see where the average eg farmer is going to find an assured market for h preserved eggs at even 2d. each.

Individual farmers, of course, may secure con- cts on exceptionally favourable terms, and if aim at producing and selling only the "genuine od articles" we may attract a circle of valuable stomers willing to pay a little more. But the st of customers are fickle, and have a tiresome bit of quoting the "market price" of goods ey have never troubled to look at, regardless of varying quality of such goods, and in the end producer suffers.

am quite prepared to adopt Mr. Burn-Murdoch's eme as soon as I am reasonably sure of a nter market for preserved eggs at the minimum ce of 2d. each. It is not too late to start this ar.

he **retail** price of eggs in this district has rcely reached 1s. 9d. per dozen. As the price es up, so the orders will subside, and in the end "Higgler," and the "Higglers" are the only ople who go on their way rejoicing.

Yours faithfully,

HUGH M. BAKER.

THE SALE OF EGGS.

To the Editor of "Eggs."

ear Sir,—For Mr. Burn-Murdoch to write in the he does is absurd. He says he refuses to sell his at less than 2d., which, unless he means an *rage yearly* price of 2d., amounts to selling no eggs a February to the end of July. This is equal to ing up your output for six months, to say nothing oss of interest, and heavy expenditure for storing mmodation. My local market prices, which are ittedly amongst the highest in England, for last fluctuated as follows:—February, 12th, 1s. 8d.; ch 25th, 1s. 1½d.; July, 1s. 10½d.

s regards pickling eggs, I had a chat recently with head buyer of the dairy department of a large of grocers. He told me that during the last two s he had never sold a pickled egg at more than 4d. *per dozen.* The firm own many shops, and buyers have to keep in touch with many markets. Mr. Murdoch scorns to sell his pickled eggs at -lucky man! I fancy he will have to hold up a full of fingers this year before he gets any buyers d. per egg plus cost of preserving—he might get it week, and he might get his cheque, but not right ugh the season, and one cannot unload all one's led eggs in one week.

my opinion a fair price for pickled eggs will be 0d., rising to 2s., and falling to 1s. 8d.

y friend, the buyer, informed me that the finest *most* reliable pickled eggs he handled were Danish Dutch, and he could always sell *these in the shops* 3d. at a profit. To obtain more faith in the sh pickled egg we must only pickle our *best and est* eggs.

"C. M."

ROUP.

To the Editor of "Eggs."

Dear Sir,—I am sure the readers of "Eggs" are much indebted to Mr. Toovey for publishing his experience with that terrible disease Roup.

Poultry-farmers all over the country will, I am sure, sympathise with Mr. Toovey in the severe loss he has sustained.

Mr. Toovey says roup was first noticed in his farm in its second year of existence, and has been there more or less for the last twelve years. Now this is where, in my opinion, Mr. Toovey made a great mistake. If he had stamped out the disease at the commencement by killing and burning the infected fowls, instead of trying to effect doubtful cures, I am sure he would not have had his terrible experience.

When a virulent disease is among livestock it will spread, perhaps not noticeably at first, but sooner or later it will come to a climax.

I am not a believer in having a hospital on a poultry farm. On our own farm, whenever an ailing fowl is brought in from one of the houses, if there is the least suspicion of a virulent disease, such as roup, the fowl is immediately killed and burned, no matter what value it may be, as even if we did cure it, we would not be sure if the cure was permanent; whereas as when the fowl is dead and cremated, it can do no harm.

We can take a lesson from foot and mouth disease in cattle. At this time last year the disease was raging all over the country. The Government carried out the slaughter policy much against the will of the majority of farmers. The farmers considered the Government's policy wasteful. They wanted to try doubtful cures.

We now find in a year's time the country is free of the terrible scourge, showing that the Government's policy was correct.

If poultry-keepers would carry out the slaughter policy with diseased fowls, I am sure we would hear fewer reports of outbreaks of disease and bad hatching and rearing results.

Yours faithfully,

JOHN McINDOE.

ROUP.

To the Editor of "Eggs."

Dear Sir,—It is my humble opinion that the experience of Mr. T. W. Toovey, as published in your issue of "Eggs," May 27th, is the most interesting article that has ever appeared in any poultry journal. I say this after due thought, and as a reader of most poultry journals, for the last three years, and a constant reader of "Eggs" for nearly five years.

Every man engaged in poultry industry must realise the appalling danger of disease, and thanks are due to Mr. Toovey for his contribution.

As a small poultry-keeper (about 900 head, including breeders), I regard certain men as giants of the industry. Many may claim this distinction, but, as you know, sir, the list is extremely limited.

It must, therefore, come as a surprise to many small men to read this remark from one who may justly be placed in the first class. "I doubt if the farm has even been entirely free of roup since the second year of its existence, certainly not for the last twelve years," but my experience of the many farms I have visited proves this statement to be a fact, with this addition, most chicken disease can be found on nearly all large poultry farms after two or three years' working; not in virulent forms, it is true, but the diseases are there nevertheless, and as far as I can see there are no actually known cures for them

The bulk of correspondence (happily "Eggs" is an exception) is received from small men-poultry-keepers, not poultry farmers, which difference finds expression in their outlook upon the industry. The experience of a man who puts down 500 eggs is of little or no value to a man who incubates 5,000; conditions are entirely different. That is why I long ago decided that I would never write to a poultry paper, but Mr. Toovey's article has made me reconsider my decision.

Here is my experience for what it is worth:—To rear 300 pullets one must put down 1,300 eggs; 500 pullets, 2,500 eggs; 1,000 pullets, 7,000 eggs; and that, sir, is the whole point of my letter. We must put down such an enormous number of eggs to-day because of the terrific mortality, and this is done every year by the big men of my acquaintance.

The knowledge of poultry diseases may be compared to the position of medicine during the 17th century, and it seems to me we are seeking cures when we should be endeavouring to discover fundamentals, or, to use a more familiar phrase, "predisposing causes." Surely, sir, this is apparent, and is confirmed by Mr. Toovey's article?

A cured bird, to my mind, is a menace, quite apart from it being uneconomic. I think this is generally accepted now by most of the leaders of the industry—and from certain knowledge which I possess I believe there are a certain few of them who have mastered this terrible nightmare of flock disease.

I respectfully suggest to you, sir, that if such information can be obtained, a committee might be selected from the more important men of your association who would investigate the collected reports of such poultry farmers, whose incubator capacity has a minimum of 10,000 eggs per season.

Because I look upon the situation as so serious, I would be prepared to pay the initial expenses of publishing such a book, the title of which might well be "Poultry Disease," or the "Elimination of Predisposing Causes."

Yours faithfully,

H. L. S.

ROUP.

To the Editor of "Eggs."

Dear Mr. Newman,—I am sure we all join you
expressing our sympathy with Mr. Toovey in
present difficulties, especially those, like ourselv
who are in the business commercially, and who kn
what trials and tribulations face the Poultry Far
from year to year, both with adult stock and especia
the rearing of young stock. We do not know the ex
motive Mr. Toovey had in making known his losse
perhaps an S.O.S. for other's opinions—but ap
rently he thinks it good for the benefit of the indust
and we admire the spirit. Taking for granted this
so, we should like to open a discussion, and get oth
to join in, and, who knows, probably discover ot
methods of dealing with this dreaded scourge in ad
stock, which is equally as disastrous as B.W.D. a
Coccidiosis in chicks. We are not exactly strang
to any of these diseases which are likely to break
at the most unexpected times, however careful
may be, as it has been proved that wild birds
carry germs from one farm to another.

We will, however, with your permissi
start the ball rolling by respectfully conden
ing Mr. Toovey's admissions. In the first place
admits that he has not been free of Diphtheritic R
for fourteen years. Now surely that requires inve
gation? What a menace to a farm to know that th
are always some birds with this on the farm! Wo
it not have been better to kill and burn all the ca
until the farm was entirely free, if by so doing so
hundreds were sacrificed by this means, and at
cut he would have saved what he is experiencing
day? He admits also that his hospitals, which h
some hundreds, are already full, which shows e
now that he is not resorting to this drastic measu
In our opinion, when roup breaks out in a house,
safest way is to treat all the birds in that house
those that have it, kill and burn—those that show
sign of it are the ones we treat in case they ha
It is no use treating isolated cases, for, when fou
they have already spread it to the others, although
apparent to the eye. Putting copper sulphate
permanganate of potash in drinking water is not su
cient. Our method, and we have found it effective
a preventative to others in the flock *when the offend*
have been removed, is to dip each bird in a str
solution of copper sulphate, at the same time keep
the beak open with the fingers—this every morn
for fourteen days. At the same time we keep a p
of strong disinfectant outside the house, and brush
boots when coming out, as it can be carried on
boots to other houses.

Finally, at the end of the fourteen days, thoroug
clean and disinfect the house out, and no more sho
be heard of it, but in our opinion to try and doc
roupy birds is a source of menace to the rest of
farm, and there is always the chance of it coming
again in the same bird at a later stage.

In Mr. Toovey's case it would seem that he has
been without it for fourteen years. In that case
ground must be roup sodden, and although it

ail a tremendous expense, his only hope would be take his stock, that he knows is clear, on to entirely sh ground. Other big farmers have been obliged to ort to this drastic method of freeing themselves, there is always likely to be a recurrence, even if ed over now, and we feel sure if he still intends carry on, that he will find it the least expensive in long run.

We admire Mr. Toovey for his pluck in making his ses known, and if through his article a solution can found, he certainly will have done a public service, l have the blessing of all those with interest in the siness.

Yours faithfully,
TILLEY & WEBB.

NORTHERN UTILITY POULTRY SOCIETY'S LAYING COMPETITION, 1924-25.

Seventh Report—18th April to 15th May, 1925.

The weather during this period has been very unsettled for first twenty-five days, during which snow and hail have been quent, the last three days the weather being like summer. days have passed without downfall.

The health of the flock has shown improvement compared h last month, less than two per cent. requiring hospital treatnt, and these mainly owing to loss of condition due to heavy ing. Just one example: Leghorn lays 86 eggs in five months; es into hospital with diphtheria; is ill three days; weight of y, 1lb. 4ozs. This is a typical case, but not isolated

Owing to broodiness of last month, the return of eggs showed radual decline to the 3rd of May, when the total was 368; since n there was a gradual rise to the end of the term, when the al was 414 on the last day. Splendid results have been obtained m the whole of Section I., Pen 5, having an average of 24 for birds—unfortunately, good percentage of these latter fail size. Mr. T. Gardner's pen of R.I.R. have added 115 to their re, but here again the small egg crops up in one bird. Seven ds have failed to be producers this month. One bird is noted ulting (neck), while 78 have been broody.

DUCK SECTION.

All these competitors are in good health, with one exception, 19, who has fallen very lame; one has died from inflamtion of the bowels.

Egg production has been better than any preceding month ing the test. Duck No. 30 has laid two eggs on four occans, four of which have been unsaleable, whilst ducks Nos. 31 l 32 have been responsible for one unsaleable egg between m, whilst their pen sister, No. 33, has the distinction of being best individual with 27 first-grade eggs.

LAYING COMPETITION, 1925-26.

A meeting will be held in the Mechanics' Institute, on Thurs-, 11th June, at 7.30 p.m. Business:—To consider rules and ticulars of Laying Competition for 1925-26. Any members who not attend may send suggestions to the Secretary, which will considered at the meeting.

EGG PRODUCTION OF LEADING PENS.

Figures are Eggs for Seventh Period and Total Eggs to date pectively:—

Section No. 1. Championship (Ten Birds).—Longworth Bros. L.), 208, 1064; Mrs. Crooks (W.W.), 203, 1038; Mrs. Canning berts (W L.), 190, 976; G. B. Metcalfe (B.L.), 232, 936; G. H. rner (W.W.), 161, 865

Section No. 2. White Leghorns.—Wm. McMahon, 101, 553; nes A Rigby, 108, 516; Norman F. E. Kimberley, 91, 499; E. J. ne, 100, 432; Richard Beesley, 101, 425; Wilson Beattie, 119, 505.

Section No. 3. White Wyandottes.—Robt. P. Virtue, 110, 556; Mrs c Wilson, 55, 508; J. E. Helm, 105, 552; Thomas Pinder, 71, 471; nes Hodgson, 85, 460; James Booth, 71, 449.

Section No. 4. Any Other Variety (Non-Sitting).—Mrs. J. H. l (B L.), 105, 399; Philip K. Berry (B.L.), 63, 398; Ernest Jackson L.), 104, 367; Robert A. Fawsett (B.L.), 87, 397.

Section No. 5. Any Other Variety (Sitting).—Tom Gardner .R.), 115, 622; J. M. Thomas (R.I.R.), 91, 516; F. and T Lumb .R.), 72, 498; F. R. Welch (B.R), 78, 489; R. Duckworth (R.I.R.). 463.

Section No. 6. Two Birds.—Bolton and Gardner (R.I R.), 42, E. J. Stone (R.I.R.), 13, 214; Mrs. A. Stow (W.L.), 43, 211; Sam d (W.W.), 34, 199; J Gordon West (R.I.R.), 30, 193; T. H. Barker Sons (B.R.), 38, 193.

Section No. 7. Single Bird.—Frank Heyworth (W.W.), 14, 140; K. Tallis (W.W.), 21, 134; E J. Stone (W.L.), 25, 123; Wm. nondson (R.I.R.), 20, 121; H. Percy Thubron (W.W.), 22, 147.

Section No. 8. Small Breeders.—Wm. Machin (W.L.), 110, 591; 1. Saul (W.L.), 90, 467; T. Lindley (W.L), 102, 426; Eric Bernard gle (R.I.R.), 105, 422; Ellis Jenkinson (W.W.), 90, 455.

Section No. 9. Cross-Breeds.—Mrs Clara Egar (B.M. x W.W.), 570.

Section No. 10. Ducks.—Wilson Beattie (K.-C.), 97, 475; Mr. Mrs. Gwynne Evans (K -C.), 83, 465; Oscar C. Brown (K.-C), 425; Chivers and Sons (K.-C.), 79, 386.

Section No. 11. One Duck.—Oscar C. Brown (K.-C.), 16, 120; hur C. Marston (K -C.), 26, 89; Mrs. E. M. Kirkley (W.R.), 14, Capt. P. C. Thompson (K.-C.), 21, 56.

THE SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

SIZE OF EGG.

So many readers write me in reference to size of egg, and their troubles in this direction. May I point out to them this is largely a matter of selective breeding, and the careful mating with cockerels bred from dams which have been notable for their size of egg.

In a recent issue I stated that the weight of eggs of the cockerel's dam should be 2¼ ozs. at least, and this, I think, should be the minimum.

Mrs. Pierce-Grove, who unfortunately is compelled, owing to ill-health, to dispose of her flock of White Wyandottes and Leghorns, about two thousand of which will be sold on 18th June, effected a wonderful improvement in size of egg and bird by importing cockerels from well-known breeders in British Columbia.

I do not suggest for a moment that it is necessary to import cockerels from British Columbia—far from it, but the male has a most decided influence on the size of egg, and the longer the period for which the birds have been bred for egg size, the more potent will be his influence.

Frequently we find that the mating of two large-egg Wyandottes results in a number of layers of small eggs in the progeny. This is no doubt due to ancestral influence. That is to say, we revert to the Hamburgh, which was largely used in the make up of the Wyandotte, and to a great extent, no doubt, accounting for its prolificacy, but still the determining influence as to size of agg.

On the other side of the question there is the precocity which is the result of selective breeding for high fecundity. Here are two factors to consider, and the difficulty is greater with the Wyandotte than with any other breed. So many people are disappointed when they go to the trouble and expense of buying a cockerel from a large-egg dam in order to improve size of egg, and find the results do not come up to their expectations, and that a large number of the progeny continue to lay small eggs. It must be remembered that small egg is always dominant to large, and it is hopeless to expect that from a single mating any considerable improvement will be effected. It is not attained and maintained by a single mating. Selective breeding must always play its part.

KEIGHLEY BRANCH.

Mrs. Wilson, Secretary of the Keighley Branch of the S.P.B.A., asked me to remind members that the Rummage Sale is fixed for Saturday, 13th June, and that all articles should be deposited in the Hall on Friday, 12th June, after 7 p.m.

Mrs. Clay, M.B.E., of Long Preston, has kindly promised to open the sale at 3 o'clock. The attendance of members and their friends is desired, and will they bring something and buy something. The proceeds are for the Laying Tests Fund, for the Yorkshire Federation.

Collecting cards for the "Mile of Pennies" should be brought to the Rummage Sale.

APPLICANTS FOR MEMBERSHIP.

Pearce, Miss M., The Pines, Bishops Castle, Shropshire.
Barrand, Mrs. A. B., Birchlands, Balcombe Rd., Horley, Surrey.
Twigg, A., Fairview, Howard Rd., Bookham, Surrey.
Percival, Thos., Rodbaston, Stafford.
Clark, Mrs. M. E., Highfield, East Horsley, Surrey.
Hall, Archie C., Holmewood, East Horsley, Surrey.
Pendrey, Wm., 16, Turfpits Lane, Erdington, Birmingham.
Stone, Henry, Matson Villa, Matson, Gloucester.
Daniels, Henry, Myrtle Avenue, Long Eaton.

ANSWERS TO QUERIES—Continued.

J. A. (Hilburn-on-Tyne) writes that he is sending some unhatched eggs—one dozen which he sat under a hen on May 9th. He wants to know whether or not the eggs were fertilised. He paid 10s. 6d. for a dozen, and bought the best the breeder advertised. He cannot understand, if the eggs were fertile, why five hatched and seven did not. The answer to his query is that the eggs were at fault. Two were infertile. The remainder sent were addled.

G. H. B. (Scorrier) asks if he is correct in penning up cockerels which he intends for next season's breeding now. It surely would be better to allow these birds free range if possible. Of course, they should be separated from the pullets. Presumably, he is not alluding to last year's birds? If so, it would be better to allow these to run with the hens.

Windsor, Kelly Bray, Callington, Cornwall.

Dear Sir,—"Eggs" has been a real help to me. It is the best Poultry paper I have ever read, especially for the person which is trying to earn a living by poultry.

Yours truly,

(Signed) JAS. WILLIAMS.

21, Arthurdon Road, Brockley, S.E.4.

Dear Sir,—You may be interested to know that I have forsaken all other poultry journals, and cleave only unto "Eggs." I share the just appreciation of your other correspondents.

Yours faithfully,

(Signed) R. E. HOOK.

Cumrew, Heads Hook, Carlisle.

Dear Sir,—In conclusion may I take this opportunity of expressing my appreciation of "Eggs" with hearty congratulations to the Editor.

Yours faithfully,

(Signed) J. T. POYNTER

Oldfield, Eversley Park Road, Winchmore Hill.

Dear Sir,—I may say I have only just discovered that "Eggs" is just the book I have been looking for.

Yours truly,

(Signed) J. DAFFARN.

Table Pigeons

By MISS E. FIDLER.

I have no pigeons to sell, so no axe to grin except the wish that bird lovers might know mo of utility pigeons. I used to advertise in "Eggs, and sold more than in Pigeon Papers, but the is a very good market locally for squabs, so I bu rather than sell, breeding pairs at present.

Squab raising goes well with poultry-keepin especially where room is limited, and particular for women, delicate people, or business men wan ing a hobby. A boy could clean out the lofts on a week. Personally, I think pigeons far and aw more interesting to watch, and know, than a live-stock kept for profit, though perhaps be keepers would not agree. I see Mr. House writing in "Pigeons" just now, saying they a not a profitable hobby, but the British nation h not yet been educated up to the delicacies of young tender squab roasted or casseroled as the have in America. There one reads of plants f some thousands of pigeons, and of squabs bein sent to market weekly by hundreds. Here we in port a very inferior article from Italy, but t market is opening up as more breeders send good stuff. This month's "American Pigeo Journal" speaks of a plant of 2,000 marketin 12,000 to 14,000 squabs in a year, and that go-ahead America would be considered a sma affair. I have exported breeding pairs to this far through a friend who sent out 100 last year, a also to South Africa.

There are various breeds of Table Pigeons, a all have their own devotees. It also depends good deal on the market, as some prefer the larg squab, weighing $1\frac{1}{4}$ lbs. to $1\frac{1}{2}$ lbs.; others will gi no more for these than for smaller squabs, abo 1 lb. each. Those preferring large pigeons wou keep Runts, Kings, Mondains, and Maltese, t smaller being Carneaux, squabbing Homers, a Golas. I see in America that a large squab w fetch $1\frac{1}{2}$ dollars (roughly 5s.). So far, locall 2s. 2d. per lb. is what the shops pay wholesale f plucked squabs, but I cannot say what oth pigeon breeders have managed to secure. One ca usually charge a trifle more on private orders, a clean as well as pluck. They are specially recon mended for invalids and delicate children account of their medicinal properties.

An average pair should have six nests a yea but a good pair might have seven, eight, or eve nine nests of two youngsters each time. The he lays again when the last pair are three to fi weeks' old, and then leaves them to their fath to look after whilst she sits on the eggs, thoug he takes his turn even at that, going on at 10 a.m and coming off at four, when she goes on for th ight. In fact, he is a much harder worked parent ian chanticleer, as a lusty young pair of squeakers is they call them in some parts) take a lot of oraging for.

I read in the "Daily Mail" recently of a hen igeon still breeding at 28 years of age (though ather unusual), so that she must have reared beween two and three hundred youngsters if a ioderate breeder. She probably was faithful to ie same male all the time, though it did not say o, for once mated they seldom break their unions. ccasionally one gets a triangular drama, and ometimes a cock-bird will go round feeding any oungsters who squeak at him.

Even a few of these big, handsome birds are a ood advertisement for a poultry farm, as people top to admire them, and by remating you can reed for pretty nearly anything you want in a ew years' time. I was shown recently a huge quab bred down from a tiny tumbler, mated to a arge bird. Heavy breeds, like Mondains, which iost people seem to go in for, do practically no amage in a garden if well fed and supplied with yster and grit (the latter especially prepared for igeons with salt in it). With a large number it best and safest to keep them in a flight run as a recaution against cats and dogs. One 10 x 10 ill give flight room to 50 pigeons, and house room 2 x 10 with a 4 ft. verandah. For a pair or wo any small place which is rat proof, but two est boxes should always be provided for each air. It pays to start with first-class breeding ock, and to stick to one breed until known.

Pigeons eat only grain, and must have plenty f clean water, both for drinking and bathing in. hey feed the young until they can fly and feed iemselves. Whilst sitting on the eggs the parent rds secrete what is known as "pigeon milk," ith which they feed the babies up to ten days' d, after which they can digest whole grain. ccasionally it happens one has to hand-feed, but i the whole there is far less anxiety and trouble ian with chickens, since one said to me lately, iat they did not like the characters of hens—they ere cold and calculating, but no one could help ving pigeons.

BRIGHTON STOCK TEST REPORT. APRIL, 1925.

	Hatching and Rearing Score.	April 1st gde. Eggs.	Total 1st gde. Eggs.	Total 2nd gde. Eggs.
Mummery (11 W.W.)	51	148	950	26
sford Egg Farm (9 W.W) ...	33	175	941	25
untess Buxton 14 (W.W.)..	56	271	1395	35
isbury P.F. (13 W.W.), ...	58	230	1366	29
Soames (9 R.I.R.)	39	172	1008	12
pt. Woodford (13 R I.R.) ...	67	260	1510	26
Glendenning (5 R.I.R.)	35	99	542	11
pt. Close (13 W.L.)	56	225	1343	18
sses Allen Smith (13 W.L.) .	64	219	1459	30
Scott Miller (8 W.L)	31	150	886	21
pt. Beckett (12 W.L.	45	231	1312	22
s. Gibson (13 W.L.)	59	246	1403	21
isbury P.F. (10 W.L)	50	197	1047	16
Brown (10 W.L.)	55	185	1044	25
ajor Shepherd (18 W.L.) ...	61	277	1566	15
W. Gunston (12 W.L.)	63	235	1255	13
ke's P.F. (16 W.L)	65	291	1595	19
Bradbury (16 W.L.)	72	302	1717	18
ss Ransford (15 W.L.)	66	260	1415	24
s Gibson (16 (B.L.)	61	290	1617	21
ke's P.F. (18 W.L.)	67	337	1723	12
ss Allen Smith (12 W.L.) ...	59	220	1194	14

JOHN H. DOWDEN, Heathfield.

TESTIMONIALS.

Cherry Orchard Cottage, Bromley, Kent.

Dear Sir,—I must, in conclusion, express my deep gratitude to you for the sound advice you give in "Eggs." It has been of the greatest use to me, and my chicks and adult stock are all raised and fed on your formulas, to my considerable profit and the birds' health and stamina.

Yours very truly,
(Signed) HERBERT BINNEY.

Whiting Farm, Roman Road, Guston, nr. Dover.
22nd May, 1925.

Dear Sir,—Without any doubt your paper "Eggs" is unique and in every way a road to make Poultry farming a success.

Yours faithfully,
(Signed) G. F. H. PRICE.

Galen House, Nightingale Road, Guildford.

Dear Mr. Newman,—I have six White Leghorn hens, and have profited by the advice given in "Eggs" to a very gratifying extent.

Yours truly,
(Signed) E. M. WAIND.

Leylands Road, Burgess Hill, Sussex.
25th May, 1925.

Dear Mr. Newman,—As a reader of your paper for several years I think it is up to me to let you know that the articles in it have been of great help to me, and I consider it of the utmost value to all those who take an interest in, and want to get a living out of poultry.

When I was in the Fressian Cattle line (by the way I bred Great Britain's first 3,000 gallon cow, Brookside, Colantha) I had to send to U.S.A. for my literature. I have no need to do this for poultry.

Yours faithfully,
(Signed) HAROLD COOKE.

Grafnant, Chester Road, Neston, Cheshire.

Dear Sir,—As a beginner, I have only just heard of "Eggs," and take this opportunity of thanking you for the valuable information contained therein.

Yours truly,
(Signed) E. COPELAND.

Long Whatton, near Loughborough.

Dear Sir,—At the same time I would like to state my appreciation of "Eggs." In my opinion it is an infinitely better paper than any of the other poultry publication.

Yours faithfully,
(Signed) C. H. KEITH JOPP (Major).

25, Woodland Road, Barry Dock, Glam.

Dear Sir,—I am only a backyarder, yet I may say I have learnt already quite a lot from its columns, and am bringing your paper before my fellow-members of the Barry Fur and Feather Society at our next meeting. With anticipatory thanks.

Yours faithfully,
(Signed) F. CURLE.

Thaba 'Nohu, Naze Park, Walton-on-Naze, Essex.

Dear Sir,—I have recently been recommended your paper, "Eggs," by a poultry farmer, and I must honestly say that there is no other poultry paper which is as good in any respect, and which gives such sound advice.

Yours faithfully,
(Signed) JOHN HERRINGTON.

Boundary Poultry Farm, Intack, Blackburn.

Dear Sir,—I have been a reader of your valuable journal "Eggs," for a few months now, and I think it is the best Poultry Paper published.

Yours truly,
(Signed) J. BIRCH.

Market Report.

MINISTRY OF AGRICULTURE RETURNS. WEEK ENDING FRIDAY, 5th JUNE, 1925.

GRAIN AND FEEDING STUFFS.—Moderate offerings of British wheat make recent rates, while at London prices are slightly higher on the week, the average quotation now being 13s. 2d. per cwt. A fair trade is passing for imported wheat and both Argentine and Australian are dearer at all centres. Feeding barley meets a quiet demand but is unchanged in price, except at Bristol, where values have advanced slightly. Home-grown oats are scarce and fully maintain recent quotations, while black and grey are dearer at Liverpool and London. Imported oats are in fair request at recent values. Maize is in moderate demand and is again dearer, Argentine averaging about 11s. per cwt. as against 10s. 9d. last week.

Offals generally are a slow trade, but recent prices are mostly maintained. At London, however, both bran and coarse middlings record a reduction of 2s. 6d. per ton on the week. Meals also show little change in value, but maize meal and maize germ meal realise more money at Bristol. Oil cakes are practically unaltered in price, but Egyptian cotton seed cake at London is reduced 2s. 6d. per ton.

MILLERS' OFFALS.—Bran (British): Bristol, £8 5s; Hull, £7 2s; Liverpool, £7 5s; London, £6 12s. Broad Bran: Bristol, £9 10s; Hull, £8 2s; London, £8 15s. Middlings—Fine (Imported): London, £9 12s; Coarse (British): Bristol, £9; Hull, £8 5s; Liverpool, £8 5s: London, £7 15s. Pollards (Imported): Bristol, £7 15s; Hull, £7 5s; Liverpool, £7; London, £7 7s. Rice Bran: Bristol, £7 15s; Liverpool, £7 5s. MEAL.—Barley Meal: Bristol, £12; Hull, £11 13s; London, £12 5s. Maize Meal: Bristol, £12 17s; Hull, £11 17s; Liverpool, £11 5s; London, £11. Maize Meal (S. African): Bristol, £11; Hull, £10 5s; Liverpool, £9 17s. Maize Germ Meal: Bristol, £11 10s; Hull, £10; London, £9 10s. Maize Gluten Feed: London, £9 15s. Locust Bean Meal: Bristol, £9 15s; Hull, £9 15s; Liverpool, £9 15s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 18s; London, £13. Fish Meal: Bristol, £20 10s; Hull, £20; Liverpool, £18 10s; London, £19 10s.

EGGS AND DEAD POULTRY.

British eggs are offered in smaller quantities and prices are firm, while the continued shortage of best imported classes has caused a further hardening in rates. Little change is reported in the dead poultry trade, the chief demand being for best quality chickens and ducklings.

Week-end Prices—Eggs (per 120): British, 14s 0d, 12s 9d; Irish, 14s 0d, 13s 0d; Dutch, 15s 6d, 14s 9d; French, 14s 9d, 14s 6d; Belgian, 14s 3d, 13s 6d; Styrian, 10s 9d, 9s 9d; Egyptian, 7s 6d, 7s 0d; Lithuanian, 11s 6d, 11s 0d; Polish, 9s 0d, 8s 3d; Russian, 10s 6d, 9s 0d. Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 6d; Irish, 1s 8d, 1s 2d; Others, 1s 10d, 1s 4d. Ducks, 1s 9d, 1s 6d.

EGGS.

Per Doz.—Ashford: First, 1s 6½d; Second, 1s 5d. Birmingham: First, 1s 4½d; Second, 1s 4¼d. Bridgwater: First, 1s 4d; Second, 1s 3d. Chelmsford: First, 1s 4¾d; Second, 1s 3d. Colchester: First, 1s 6d; Second, 1s 4d. Doncaster: First, 1s 6d; Second, 1s 5d. Dorchester: First, 1s 3d; Second, 1s 2d. Exeter: First, 1s 4d. Hereford: First, 1s 1d. King's Lynn: First, 1s 5d; Second, 1s 4d. Llandilo: First, 1s 2d; Second, 1s 1d. Mold: First, 1s 4d; Second, 1s 3d. Newport (Mon.): First, 1s 3d; Second, 1s 2d. Norwich: First, 1s 6d. Oswestry: First, 1s 2d; Second, 1s 1d. Penzance: First, 1s 3d; Second, 1s 2d. Saffron Walden: First, 1s 6½d; Second, 1s 4½d. St. Ives (Hunts): First, 1s 4½d; Second, 1s 3d. Salisbury: First, 1s 2½d: Second, 1s 2d. Skipton: First, 1s 5d. Truro: First, 1s 2d; Second, 1s 1d. *Carlisle: First, 1s 4d. *Derby: First, 1s 4d. *Ipswich: First, 1s 6d; Second, 1s 3d. *Lincoln: First, 1s 4d. *Shrewsbury: First, 1s 3d; Second, 1s 2d. *York: First, 1s 5d: Second, 1s 4d.

FOWLS.

Per lb.—Birmingham: First, 1s 7d; Second, 10d. Doncaster: First, †5s 0d; Second, †4s 0d. Exeter: First, 1s 8d. Hereford: First, 1s 6d. Llandilo: First, 2s 6d; Second, 2s 4d. Newport (Mon.): First, 1s 9d; Second, 1s 4d. Truro: First, 1s 4d. *Derby: First, †5s 6d; Second, †4s 0d. *Ipswich: First, 1s 10d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 1s 4d.

DUCKS.

Per lb.—Doncaster: First, †5s 0d. Exeter: First, 1s 8d. Hereford: First, 1s 6d. Llandilo: First, 2s 6d; Second, 2s 4d.

* At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, June 10th, 1925.

CONTENTS.

EDITORIAL 377
SIXTH MIDLAND LAYING TEST 378
MIRFIELD AND DISTRICT P.K.A. LAYING TRIALS 378
MODERN POULTRY FEEDING 378
S.P.B.A. ... ...379 and 389
THE HEN AND INCUBATOR COMBINATION 381
HANTS COUNTY LAYING TRIALS 382
ANSWERS TO QUERIES ... ... 383 and 390
POST-MORTEMS 384
CORRESPONDENCE 386
NORTHERN U.P.S. LAYING COMPETITION 389
TABLE PIGEONS 390
BRIGHTON STOCK TEST 391
MARKET REPORT 392

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to the poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue. It is hardly necessary to add that the earlier in the week we receive copy the better it is for every-one concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, JUNE 17th, 1925.

Editorial.

ON MANAGEMENT.

One of the most interesting experiments yet ecorded was that reported by Mr. H. G. Goodale, in Poultry Science." The object of the experiment 'as to test:—

(1) Whether increased illumination would be as ffective on birds bred-to-lay, as on ordinary stock?

(2) Can increased production be secured by remov- ig the comb and wattles?

(3) Will the addition of milk or cod liver oil be of alue?

To answer these questions an experiment was set up p in the following groups:—

(1) Standard rations with artificial lengthening of ie day during the winter.

(2) The same with cod liver oil added to the ration.

(3) The rations altered by removing half the meat rap, and substituting semi-solid buttermilk *ad bitum*. No lights.

(4) Standard ration, no lights, comb and wattles moved.

(5) Check pen, Standard rations, no lights.

It is known that Leghorns and the light breeds enerally are more affected by cold than heavy breeds, nd the removal of the comb and wattles was suggested ecause of the great amount of heat lost through iese appendages; some food must be required to make ood this loss of body heat.

What results would be expected from this experi- ient? We have first to consider the environment, nd to remember that this includes all external ifluences, and that however favourable it may be, can do no more than permit the hen to give full xpression to the characters which she has inherited. it is unfavourable, then it will prevent her doing so.

In an ordinary flock it has been found that artificial lumination will lead to very considerably increased gg production during the winter months. With the red-to-lay pullets, used in these experiments, no ppreciable difference was found. Commenting on iis, Mr. Goodale remarks: "Students of the influence increased length of day on winter egg production ave commonly assumed that the beneficial effect ame from increased opportunity to eat."

Several years ago he had the opportunity of study- ig the trap-nest records of several pens of pullets, some under lights, others without. In the latter group production was relatively poor. A study of the trap-nest records showed that the production in the unlighted group was being borne by a few individuals, which were laying just as well as the individuals in the lighted group. From this fact he deduced that it is not the increased consumption of food which leads to the greater egg yield, but that the increased production under lights is the result of direct stimulus, resulting in accelerated maturity. On this point there is much to be said: The difference in the capacity of individuals to consume sufficient food in a limited period would necessarily have to be considered; the laying tests and the trap-nests have demonstrated without the possibility of doubt that the highly fecund individual will lay to her utmost capacity without the aid of artificial light.

With his remark that it would be possible to breed a strain of birds that will lay as well with lights as without lights, we are in complete agreement. A highly fecund strain would probably collapse under lights. Individual birds have done so.

Before going further it is necessary to recite the conditions under which the experiments were run. Twenty houses of identical design, arranged in three groups—one row of five facing S.E., one of five facing E., a second row of five facing W., and a third row of nine facing S. The twentieth house was one of a fourth row, facing S. The row of houses facing W. differed in construction from the others, having a window on the South side. All the houses had double walls and ceilings, and wooden floors, and are described as "snug winter quarters."

Under these conditions it is possible to understand why the removal of the comb and wattles had not the expected effect. During the day the activity of the birds would protect them from the effects of severe cold. With snug winter quarters, i.e., double walls and ceilings, the effect of the cold would not be severely felt. We must confess we should like to see this experiment repeated under normal conditions in an ordinary open-fronted house. Except when exposed to biting winds, we may fairly say that cold does not greatly affect adult fowls during the daytime; the mischief arises during the long night hours. It is fairly certain that warmer houses would lead to better production.

Dealing with the addition of cod liver oil and milk to the mash, we find that the following standard ration was used:—

A dry mash, composed of equal parts by weight of wheat, bran, white middlings, ground oats, meat scraps, and corn meal. The dry mash was always before the birds, and grit, shell, charcoal, and water always available. The grain ration was 300lbs.

cracked corn (maize), 100lbs. wheat, and 80lbs. oats. This was given as a scratch feed five times daily, and at night all the birds would consume was fed in troughs. It is, therefore, not surprising that the addition of cod liver oil or milk did not lead to higher production.

Milk is an invaluable food for young chicks, and feeding it to breeding stock results in better hatchability and stronger chicks. But we have never found any advantage in feeding it for egg production, or for growing stock over three months' old. With such a high corn content with the ration, one would hardly expect to see the addition of cod liver oil had improved egg production. The cod liver oil was gradually introduced, but at the end of the test no difficulty was experienced in inducing the hens to take up one-eighth of an ounce per day.

This article raises the very interesting and important question of management, and it will be agreed that it is important. Something, not apart from the problems of housing, breeding, feeding, etc., but rather the application of knowledge gained by experience and observation. If we read the article superficially we might readily come to the conclusion that the experiment had proved that dubbing was of no value, and this addition of cod liver oil or milk to the ration would not give improved results, and the summary in which the statement is made, that "no statistical difference was observed" as a result of these experiments, will give us a very mistaken idea, if we do not remember that they were carried out with bred-to-lay stock, with environmental conditions, both as regards housing and feed, which were entirely favourable to maximum production. That being the case, it is not surprising to learn that nothing was to be gained from artificial light, the additions to the ration, or dubbing.

FORCING FOR EGG PRODUCTION.

I am being repeatedly asked at this season of the year for a good forcing mash. Take the following letter as an example:—

> "As I have several hundred old hens I wish to do away with about Michaelmas, may I ask you what you consider the best way to force them?"

I think it should be generally recognised that a normally well-fed bird will produce eggs without forcing. That forcing can only be continued for a very short period, otherwise you will get a number of shell-less eggs and prolapsus. Further, it should be noted that the quality of the egg inevitably suffers. When an old hen is going out of production you will gain nothing by forcing. The only thing you can accomplish is with a hen which is laying; then by a very stimulating mash you may induce her to lay three eggs a week instead of two, for a short time.

The following is a useful formula:—2lbs. bran, 4lbs. middlings, 2lbs. maize meal, 1½lbs. fish meal or meat meal.

This should be always before the birds. If used as a wet mash another 1lb. of middlings should be substituted for 1lb. of the bran. The grain ration should be cut down to the minimum to induce the birds to consume as much of the mash as possible.

Modern Poultry Feeding.

By TOM NEWMAN.

THE WELLINGHAM EXPERIMENTS.

Whatever one may write on feeding, and whatever theories we may hold as to food values, it is results that count, and we have got them in the Wellingham experiments.

Below I give the weights of the eleven heaviest cockerels in the Feeding Experiment as killed and plucked for marketing, when exactly fourteen weeks old.

These, it will be recollected, were dry mash fed on the formula which has been given many times in "Eggs," until they were eleven weeks old. After that they were trough-fed for fourteen days, and then crammed for one week.

Miss Orr, who possesses remarkable skill as a producer of table poultry, used the following cramming mash:—Half a bucket of chicken rice, boiled in water. The bucket filled with sour separated milk and mixed to a paste with Sussex ground oats, which if husky, should be sifted.

One must give due credit to Miss Orr for her part of the work, which consisted in the two weeks' trough feeding and one week's cramming. In the hands of anyone less skilled, of course, such remarkable results would not have been obtained:—

FINAL WEIGHTS OF 1925 FEEDING EXPERIMENT.

Ring colour.	11 weeks. (Brought to crates from colony field).		13 weeks. (Trough-fed, in crates two weeks).		14 weeks. (One week's cramming).		Dead weight. (Plucked for marketing).	
	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.	lbs.	ozs.
Pink Plain ...	3	0	4	2	4	14	4	0
Pink Spiral ...	3	0	4	4	4	14	3	14
Blue Plain ...	3	1	3	14	4	7	3	12
Blue Spiral ...	3	5	4	7	5	2	4	4
White	3	1	4	6	5	0	4	4
Claret	3	4	4	4	4	12	4	0
Black	3	2	4	4	4	14	4	4
Green	3	1	4	6	4	14	4	4
Yellow	3	1	4	2	5	1	4	6
Brown	3	0	4	6	4	8	3	11
Red	3	1	4	6	4	14	4	8

However, the experiment is by no means concluded and we have to see the effect of such feeding upon the pullets. These, as I have previously stated were in splendid condition when we last visited the farm, and note will duly be kept of the date of the first egg, and what progress is made.

The value of the experiment to the producer of table poultry will, however, be evident, for if he can get such weights as this at such an age, then table poultry should indeed be profitable.

It is only right, however, to say, in case enthusiasm should outrun discretion, that the cockerels selected were the heaviest, but the average was exceedingly good, and much above the average usually realised at this age.

Turning now to the Intensive Experiment. The irst pullet laid on the 30th May, being four months' ld less one day. She is a well-grown and large bird, nd the weight of the egg was just under 1½ozs.

We have here a point of interest as to environmental onditions and inherited Early Maturity.

Although the birds have been reared absolutely in- ensively, the conditions might almost have been escribed as ideal. Since the date of hatching they ave been protected entirely from inclement weather, hile the house has been constructed in such a manner hat they have the fullest advantage of all the sun- hine, and we must try to realise what a very impor- ant part this has played in the experiment. In fact, I may venture a personal opinion, the success or ilure of the Intensive System will depend entirely pon the construction of the house, and the amount f sunlight which is admitted. Perhaps I should say e quality, for, obviously, to expose these pullets to e blazing hot sun of a July day would not be con- ucive to health and vigour.

The mash which has been fed was:—Four measures iddlings, two measures maize meal, three measures ussex ground oats, half measure dried yeast, quarter easure linseed meal, half measure fish meal.

One measure of this was mixed with two measures broad bran. As before-mentioned, a slight indica- on of leg-weakness was shown. We cannot say more, only two birds were affected. For this reason two er cent. cod liver oil was mixed with the bran. This as now been discontinued, and the birds have been it on the following mash:—1lb. Alfalfa meal, 1lb. an, 4lbs. middlings, 1½lbs. Sussex ground oats, ½lb. aize meal, ½lb. soya bean meal, ½lb. fish meal.

The Council have agreed to my suggestion that e pullets should be trough-fed with kibbled maize as e last feed, allowing them as much as they will con- me in order to see whether we can prevent the rtial moult by this method of feeding.

If this Intensive Experiment proves the success hich we hope it should, when carried further, it ay have a very profound effect upon the future of e industry, more particularly in reference to the aring of chicks and checking the enormous losses rough Coccidiosis and Pneumonia, and possibly may timately lead indirectly to less trouble from out- eaks of Diphtheritic Roup. However, it is but now the Experimental stage at present, and we must e what developments take place.

Thaba 'Nohu, Naze Park, Walton-on-Naze, Essex.

Dear Sir,—I have recently been recommended your paper, 'Eggs,' by a poultry farmer, and I must honestly say that re is no other poultry paper which is as good in any pect, and which gives such sound advice.

Yours faithfully,

(Signed) JOHN HERRINGTON.

25, Woodland Road, Barry Dock, Glam.

Dear Sir,—I am only a backyarder, yet I may say I have nt already quite a lot from its columns, and am bringing ir paper before my fellow-members of the Barry Fur and ther Society at our next meeting. With anticipatory thanks.

Yours faithfully,

(Signed) F. CURLE.

Answers to Queries.

By the EDITOR.

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) **can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d. per letter, these are answered by the** Editor, **and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (NOT from Major Saunders).**

ALL questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

A. B. (Norwich) sends records of his pullets, 14 in number, which are good enough as far as numbers of eggs go, but fail in respect to size except with four of the birds. He asks whether he should breed from them, and if he mates them to the son of a large egg hen, what the result will be. If they were my own stock, I should only breed from those four pullets which laid good-sized eggs, and they should be mated to the son of a 2¼oz. egg dam, and should require the same weight from his sire's dam. As to the remaining ten, the same mating would be the best if he seriously thinks of breeding from them, but he should recollect that small egg is dominant to large, and it will be a mistake to expect immediate improvement. It will be a question of very careful selection. Once having secured a large egg strain, you must endeavour to keep it pure for large eggs, and the greatest care should be exercised in the introduction of new blood. The sample of ground oats is fair quality and value, but are not "Sussex." They would, however, answer the same purpose. The meat meal contains too much bone, and is dear at 20s. per cwt. The biscuit meal is the sweepings from some biscuit factory, contains a good deal of sugar; it is fair value for the money, and could be used in the same proportion as maize meal.

F. L. D. (Cheshire) wants to know something of the old Black Spanish, and whether anyone breeds them in this country now. It is some years since I have seen any. The first poultry book I ever remember to have read had an illustration of one on the front cover, and we kept a few many years ago. They were good summer layers of large white eggs, but as winter layers they did not shine—very few fowls did then They were rather smaller than the present-day Minorca. It was the introduction of this breed and the breeding them for the huge pendulous white lobe which eventually killed the Spanish. They earned, not undeservedly, a reputation for delicacy, which was probably the result of in-breeding. In fact one may say definitely it was so, for it involved very close in-breeding to get those extravagant characters which the exhibitionist demanded. I believe there are one or two breeders in the country, but I do not know who they are. (2) You will not get sex-linkage by mating Black Leghorns to Rhode Island Reds.

L. V. (Malvern) has January pullets which have started to lay, and now he wants to prevent the partial moult It would save me some trouble if I were able to tell him, but that is not possible. The best advice I can give him is to try the same experiment we are making in the S.P.B.A. intensive birds. Keep to the same mash, and trough feed the grain, giving those which are actually producing as much as they will eat as the last feed. I can promise nothing from this, but it seems the most likely method of checking the partial moult; preferably the grain should be kibbled maize. In reply to his second query as to the condition of the feathers of two pullets. What he has written is not very clear. Will he send me some of the feathers? The fish meal contains an excess of oil. It is not fit for poultry feeding, and is likely to cause serious digestive trouble.

Almer (N. Wales) sends what he describes as "feed oatmeal." In reality it is oat dust feed, and a bad sample at that. It is dear at 9s. per cwt., and could not be used for poultry feeding. (2) In answer to his second question, it is generally agreed that the male bird has most influence over external characteristics, such as the head points, comb, eye, etc., and the colour of plumage, and that the female has most influence over the size and constitution. (3) The pullets which are feather-eating are too closely confined. The trouble is not inherited, nor is it due to deficiencies in the ration, as a rule, but is just vicious habit—the result of idleness. The best plan would be to give them free range. If this is not possible smear the feathers with some noxious substance, such as lard, with a little bitter aloes mixed with it, and keep them busy.

"Satisfied" (Ripon) writes that he had done remarkably well since he used "Handling and Observation" charts to guide him in culling his flock. "I was able to pick out the wasters very quickly, and have a much higher egg average than last year, and a lower corn bill. As you know, prices of foodstuffs are quite a bit higher. Everybody ought to have those charts—they are an enormous help." That is satisfactory. Now he wants to know whether the fact that some of his White Wyandotte pullets have "come with black feathers," and whether it is because their dams were mated to Rhode Island Red males last season, in order to get sex-linked chicks. How often this question turns up, and so repeatedly has it been said that the previous mating did not influence the chicks of a second mating, and the explanation given. Th black feathers, "Satisfied," are due to the fact th the White Wyandotte is a sport from the Silver. As would necessarily carry black pigment, is it any wond that black feathers sometimes turn up? (2) As yo birds have such good range, it hardly seems nece sary to add any animal protein to the mash, the being an abundance of insect life.

"Troubled" (Dublin) sends samples of meals whi he asks me to examine very carefully, as his pulle have suddenly dropped badly in their egg yield, a are moping about, combs shrivelling up, and weari a generally dejected appearance. He has been usi six parts pollard, one Indian meal, one barley me and one meat and bone meal, and to this mash h mixed one third house-scraps. I have careful examined all the samples. They are of avera quality. The barley meal is rather husky, and t oats thin, but there is nothing which would in a way account for the condition of these birds. W must now turn to the house scraps, which are alwa an unknown quantity. Is there likely to be an exce of salt, as this would account for the condition of t birds. There would be excessive thirst and diarrhoe so many things find their way into house scraps, a it is here I should look for the cause if I we "Troubled." In answer to his second question, would not advise either the Light Sussex or t Australorp in such an enclosed space. Rhode Isla Reds or Wyandottes would be more suitable.

"Barney" (Ayrshire). The Barnevelder is a ve hardy fowl. You need have no fears on that sco, and if you want large brown eggs, you could not better. They are not better layers than the Cro Langshan. If you are interested in the latter bre you should write to Mr. Alexander Smith, the Sec- tary of the club.

"Samples" (N.B.) is also troubled, and se samples of foodstuffs to see if they are so bad as cause the "wretched" condition of his birds, and "awful" egg yield. The samples do not explain The bran is poor, the parings only moderate, but t would not explain it, the other samples all being good average quality. The key to the mystery lies i question he asks: "Why do my birds pick feath from themselves?" It is because they are lou "Samples," however unpleasant that informat may be to you, it is necessary for me to convey You will have to thoroughly clean and limewash house, paying particular attention to the nest bo and perches, and adding carbolic acid to your l wash. Then each bird must be treated individua The best thing to use would be sodium fluoride, the best method of applying it is by means of a sn pair of bellows, paying particular attention to fluff on the abdomen, beneath the wings, and neck hackle. It is a tedious job; the infestation by would badly affect egg production and the health the birds.

" Champion " (Devon) asks whether I would kindly form him, through these columns, the best month to ndle and examine for pigment, his 1924 Leghorn llets for next year's breeding pen, and also the best onth to handle for the 1923 hatched pullets, which ere used as breeders last season, so as to include in e breeding pen. Pigmentation can play no part in ch a test now in selection for breeders. This is sentially a pullet test, and in my opinion with April-tched pullets, is best made at the end of December hen they are eight months old. Then you get a fair dication of their value as breeders, because even a or layer will lay out the pigmentation very quickly the flush months. My correspondent should select s breeders now, and leave the pigmentation alone at is season of the year. Watch the 1924 pullets care-lly till the end of September, rejecting those which oult early, those which are soft in feather and which e round-boned, or perhaps it would be clearer if I y those which are full in the shanks. Let him take om his flock now a really good layer and a compara-vely poor one, and examine the legs. He will find the case of the good layer they are hollow and flat, hile in the poor layer they are rounded and full. The ther characteristics have been so often enumerated "Eggs" that it is hardly necessary for me to repeat hem here. Apart from the pigmentation I find that any of my correspondents do not appreciate the value f the shanks as an indication of what a bird may have roduced. If a healthy bird, and a really good pro-ucer, is compared with a moderate one, they would on understand what is meant.

M. N. B. (Bexhill) asks if we can recommend ny book giving the anatomy of the fowl; also a ook on table birds and intensive poultry-keeping. s to a book on the anatomy of the fowl, I do not hink she can find anything better than Professor 'Charnock Bradley's " Structure of the Fowl," ublished by A. and C. Black. I do not know of ny books on table poultry or the intensive system. book on the intensive system seems to me rather nnecessary, because there is no difference in the onstruction of an intensive house and one on semi-ntensive lines. Neither is there any material lifference in the feeding. The real point is to see hat the house is well constructed and sufficiently ighted, that the birds are supplied with as much resh green food as possible, that the litter is kept lry, and that the birds get sufficient exercise. ages might be written about it, but the only lifference between that and the semi-intensive ystem is that indicated above. A good article on he subject of table poultry is to be found in the eaflets issued by the Ministry of Agriculture, and his, I think, can be obtained, at a charge of 6d., y writing to the Secretary, Ministry of Agri-ulture and Fisheries, 10, Whitehall Place, S.W. 1.

42, Cherry Street, Birmingham.

Dear Sir,—I may say I am a regular reader of "Eggs," which consider is the best paper published on poultry matters.

Yours faithfully,

(Signed) A. B. BRADLEY.

POST-MORTEMS.

H. B. The post-mortem examination of the pullet showed that suffocation, due to plugging of the windpipe with diphtheritic roup deposits, was the cause. The disease is infectious, but causative germ unknown, and you did well to isolate the affected ones. Continue with the copper sulphate in the drinking water, and use the same solution for dipping the heads of birds with swollen faces and eyes, holding them with the mouth open and keeping under for twenty seconds. Examine them daily and remove any yellow patches seen in the throat or mouth, and paint the raw places left with tincture of iodine. This is generally a satisfactory way of treating this disease, but in some outbreaks is not successful. If such should prove to be the case in this instance, resort may be had to the more modern methods of treatment by hypodermic injections. These have been little used in England, but extensively so on the Continent. The latest from Germany is the injection of 96 to 128 minims, boiled milk, under the skin with a hypodermic syringe, one such injection is said to be sufficient. An anti-serum and vaccine is also available, and might be worth a trial on selected cases. Again an autogenic vaccine can be prepared from the affected birds, and this might be considered if the ordinary treatment fails.

T. O. B. The post-mortem examination of the W.W. cockerel showed that it was affected with Amyloid degeneration of the liver and dropsy. The cause of this condition is unknown, but it is presumed to be of dietetic origin, not to any special foodstuffs, but to a perversion of metabolism. Theer is no treatment, and nothing can be done in the way of prevention.

R. M. R. There were no lesions of disease to be found in this bird, but emaciation was extreme, and an examination of the blood showed that it was affected with anaemia. This, in my opinion, was due entirely to the millions of lice with which it was infested, which, besides taking their toll of the blood, prevent rest and sleep, and may even cause a general toxaemia from absorption into the circulation of their waste products, as in trench fever in man. It is by no means uncommon to find cases similar to this in animals heavily infected with lice, the post-mortem lesions of emaciation and anaemia being identical.

R. B. H. I could find no signs of roup in any of its forms, but the lungs were pneumonic and the kidneys completely blocked with urates. The lung condition, which in my opinion is only secondary to the gout, would account for the coughing and sneezing noticed. A large number of gout cases in young birds are in evidence lately, and this is due, I consider, to the present-day methods of feeding ; the balance of the ration is so nicely calculated in the various formulae that the amount of natural animal food that the birds can now obtain, so seriously disturbs it, unless of course a reduction of manufactured animal products is made to allow for it, that these conditions of perverted body chemistry arise. The birds should receive a purgative dose of Epsom salts to begin with, and smaller ones two or three times a week until the bowels are freely working and the kidneys cleared. Animal foods and maize should for the time being be withheld from the ration, but green food or roots should be provided in abundance.

N. M. S. The post-mortem examination of the hen showed that she was affected with diphtheritic roup. The lesions certainly were not extensive, and the other cases that you report seem to be of a mild character, but with this, as with other infectious diseases, the virulence of the outbreak may increase at any moment, and all the secondary complications that characterise this trouble make their appearance. Place the flock on drinking water medicated with copper sulphate, one dram to every gallon; remove the yellow patches in the mouths and throats, and paint the raw surfaces left with tincture of iodine. The birds should be examined daily, and treated as required, but the hands should be disinfected after handling each one. Disinfect the house with a strong solution of chlorinated lime, quarter pound to the gallon of water, and water the ground in the immediate vicinity of the house with the same.

J. A. The post-mortem examination of the R.I.R. pullet showed an intense inflammation of the bowels, throughout their length, and great irritation of the proventriculus and gizzard. This is most suggestive of poisoning by some corrosive and irritant poison, such as arsenic, and it seems probable that she had picked some rat poison or discovered some sheep dip or fruit tree spraying solution containing it.

G. T. The post-mortem examination of the chicken showed that it was suffering from anaemia, due to a heavy infestation of the Heterakis Papillosa, a small round worm that inhabits the caeca. To treat, give one minim each of oil of chenopodium and oil of turpentine in ten of castor oil, or mix in the mash, for fifty birds, one teaspoonful of powdered pomegranate root. The droppings should be swept up and burned, and the floors of the houses disinfected, to destroy embryo worms and ova. When obtainable, tobacco stems, finely chopped and steeped in water for a couple of hours, and the whole mixed in the mash, is most effectual in removing round worms, two doses, at a few days intervals, being usually sufficient to entirely eradicate them.

M. C. The post-mortem examination of the hen showed that internal haemorrhage from the rupture of a blood tumour of the ovary was the cause. The liver of this bird was also very degenerate, which would have led to trouble later on if she had lived. There were no signs of coccidiosis. Yes, it is quite possible that a wild bird introduced the trouble, but a rabbit would not do so, as the coccidiosis of the latter is caused by a different species of coccidia to that of birds. It is quite possible for a bird to recover and not remain a carrier, but there is always the possibility of her being one.

H. F. The post-mortem findings in the two hens submitted were as follows: two-year-old Leghorn, peritonitis, due to death and decomposition of several ova still on the stalk, kidneys blocked with urates; one-year-old R.I.R., peritonitis following rupture of the uterus, kidneys blocked with urates. No signs of coccidiosis in either bird. Too stimulating a diet seems to be at the root of these troubles, especially as regards animal matters; the rupture of the uterus may be considered as accidental, but the kidney condition in both and the aborted ova indicate the primary cause. I should advise a modification of the ration to correct this gouty tendency, no maize or animal meals, but plenty of green stuff or roots, and a course of Epsom salts in the drinking water to clear the kidneys.

B. W. The post-mortem examination of the R.I.R. pullet showed that the cause was generalised tuberculosis and tubercular peritonitis. Treatment was of course out of the question, and any incontacts that show signs of illness should be destroyed immediately. The premises should be most thoroughly disinfected, and every endeavour be made to confine the disease to the pen from which she came, or the whole flock will in time become tainted, and the trouble persist indefinitely.

C. P. The post-mortem examination of the chick showed that it was affected with gout, the kidneys being completely blocked with the urates of sodium, that are the result of the perverted body chemistry following an excess of animal protein in the ration. Maize and animal matters should be discontinued for a week or so, the diet consisting mostly of grains and green food. They should receive at once ten to fifteen grains of Glauber salts, and a daily dose of five grains for a week.

Saltburn-by-Sea, Yorks.
11th November, 1924.

"Dear Sir,—I appreciate 'Eggs' tremendously—there is something good on every page, and it is really the **only** Poultry Paper worth reading. I have found the other papers a sheer waste of time."

Yours faithfully,
(Signed) (Miss) E. ARMSTRONG.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

ROUP.

The decision of the Council to move, at the meeting of the National Poultry Parliament, an mportant resolution, asking that a committee or ommission of research workers and practical reeders shall be appointed, in order that the best dvice obtainable shall be given the public, as to he best possible means of preventing serious outreaks of roup will, I venture to think, meet with he full approval of our members.

In suggesting the resolution to the Council, I ad not in mind any further investigation, so much s a full consideration of all the facts and knowedge, which we at present possess, so that at east we may be able to make the best use of what ttle we know. If we are to make the fullest use f our knowledge, it seems to me that closer ollaboration between the scientist and the pracical breeder is essential. The former should be iore closely acquainted with the conditions under vhich the poultry farmer is working, and the reeder should know more about the disease, specially in the early stages, so that he shall more uickly recognise it, and be in a position to take recautionary measures immediately.

Mr. Toovey's article describing the outbreak on is farm aroused widespread interest and symathy, and we are greatly indebted to him for riting so fully and frankly. Great surprise has een expressed that he should state that the farm ad never been entirely free from roup. May I ay there is nothing astonishing in this statement, iany other breeders have said the same thing to ie of their farms. Further, let me say that Mr. oovey's is by no means an isolated case. Very erious losses have been sustained on other large rms within the last few months, although they re not comparable with his. It is well to say iis, because we shall more accurately estimate the osition.

It is wise to remember that on Mr. Toovey's rm the disease was of a very virulent type. I ention this because many readers have written fering advice and sympathy who entirely fail to cognise this fact. Ordinary remedies proved holly ineffective, and so far the "extraordinary" ies employed have failed. Mr. Toovey has probbly had as much experience with roup as anyone this country, and it should be remembered that has had the best advice obtainable, both from actical men with long experience of the disease nd scientists.

There are two points on which he will perhaps permit me to comment. I venture to do so, because I am well aware that he did not publish his losses for the sake of sympathy, or with the sole desire of obtaining advice. His real object was to warn the industry.

We must mention again that roup was always present on the farm, although not a greater degree than one would expect where several thousands of birds are congregated; a large number of birds would have been treated, **and returned to the flock Cured(?). How are we to determine when a bird is cured of roup, and when can we say she is actually free from the disease?**

To all intents and purposes she may be cured—that is, she may appear healthy—but it does not follow that she is free from the disease; on the contrary, she may be spreading it through the excrement, and it is very probable that she is doing so. Then we come to the question of the manure pits, and that area of ground in front of the house, which whatever precautions we take is usually pretty filthy. Now, presuming we have a dozen **cured** birds in a flock of 200, is it not patent that these birds are spreading infection, and that this piece of ground, not to speak of the manure pits, may become sodden with roup germs? Against this argument Mr. Toovey may reply with perfect justice, that he has followed this policy for years, and has escaped any serious outbreak. That is true, and it is not easy to answer, but the cumulative effect of all these years is the only reason of which I can think to account for the severity of the outbreak. There are certain farms in this country where roup is always existent in a mild form, where the conditions are so good that it will never assume a severe type; indeed, the breeder may not be aware of its existence. This I know to be the case, but if birds from that farm are sent to another where the conditions are bad, it may develop in a very serious form. It is to be hoped that the National Poultry Council will accept our resolution. Immediate results must not be expected. We have to look years ahead, and it is rather a question of the modification of our present ideas than the abolition of existing methods. There are so many aspects from which the problem should be considered. I would draw readers' attention to Major Saunder's reply to "H.B." under Post-mortems, more particularly that which refers to the latest treatment from Germany.

Since writing the above I have received the article from Mr. Toovey, which is published in another column.

He is perfectly correct in saying that roup in its more virulent form has been more prevalent, and that heavy losses have been incurred on other farms, but the point which I think we should take up at once, and in which at present I cannot see my way to agree with him, is in the moral which he has drawn from his own experience, that "no poultry farm is properly equipped unless it has the necessary hospitals and convalescent homes to meet a moderate outbreak."

If I may again express the same opinion, it is that the real source of Mr. Toovey's trouble has been the return of cured (???) birds to the flock after they have been in hospital. This, in addition to his manure pits, and the land around the houses, appears to me to be the real key to the situation. It is not suggested that these conditions are the causes, but that the cumulative effect is the cause of the malignant type the disease assumed, and the impossibility of isolating any single unit prevented the outbreak being brought under control. I agree with him, his houses could not have been responsible for the outbreak; they are well ventilated, and had they not been very serious trouble would have resulted years ago.

We come right back to the point as to whether a sick fowl is worth treating, more particularly one affected with a disease which is always menacing to the flock, and may at any time cause the most serious losses.

I can only repeat what I said 3 years ago at Harper-Adams, that the treatment of birds suffering from diphtheric roup is, in my opinion, a very grave mistake.

Again, I do not agree with Mr. Toovey on another point, and that is in the question of research work into disease.

The more important consideration is a greater knowledge of disease by the poultry-keeper. In spite of all that has been written on this subject, whether it be Roup, Coccidiosis, B.W.D., or other diseases, the ignorance displayed by the average poultry-keeper is amazing. I am speaking somewhat plainly, because to me it is amazing, and I know that the losses incurred from disease might be considerably minimised if only a little intelligent interest was taken in it, and some endeavour made to recognise it in the early stages.

We will take Coccidiosis as an example. The disease has been described times without number in "Eggs." Also the precautions to be taken. The symptoms are so clearly defined that they would appear to be unmistakable even to the novice, and even if they were not unmistakable they should certainly make him suspect what is the matter, and he could act as advised until his suspicions were confirmed. Yet in the past week I have had five letters from readers who have lost between 40 and 70 per cent. of chicks from three weeks' old and upwards from this disease, and have never taken any steps to stamp it out, until it has almost spent itself—and, let it be said, this is quite an ordinary experience.

I feel it is hopeless to fight with disease unless we can interest the poultry-keeper, and persuade him to take drastic steps, when the first outbreak occurs.

To take an extract from one letter, the writer said that he lost over 50 per cent. of his chicks. He had tried sulphate of iron because they looked pale, had given them Cod Liver Oil. They had also had Epsom salts. All these things had been tried in turn, and when a post-mortem examination was made it was found that the mortality was caused by Coccidiosis.

Is a bird which has suffered from Diphtheritic Roup worth returning to the flock? I feel the answer is most decidedly in the negative.

My hopes for the future do not rest in any of the advertised remedies and preventives. It is the sma unit on a farm so planned that when an outbrea occurs in any single house it can be promptly isolate and dealt with; and further investigation of th Intensive System; the other factors are proper nutr tion, housing, and sound methods of breeding, an until we face these fundamental facts, we shall neve successfully fight Roup or any other disease.

No hospitals would ever find a place on my farm.

TABLE POULTRY.

I have received a letter from one of our membe in Scotland, who has a very large demand fo table poultry. In order to meet this demand h has established a system of purchasing locall where he offers a price per lb. live weight, wit empty crops, and delivered to his particular statio in crates which he supplies, and by this metho the customer knows, at the time of despatch, wh he will get for his birds. The birds should b from 3 lbs. upwards, and should be healthy sprin chickens, reasonably fat, and preferably heav breeds. They could always take reasonable pr portions of light breeds, provided they are of th weight mentioned.

The foregoing remarks also apply to duckling

I shall be pleased to forward any letters to m correspondent if any of our readers will care t communicate with him, but I must ask them t read with understanding what has been writte above, and to remember that even live birds alway lose a certain percentage of weight after despatc It is usual, I believe, to allow ten per cent. for thi

I may add that it is perfectly useless to send bir which weigh under 3 lbs. when despatched, an with empty crops.

THE CLITHEROE LAYING TESTS.

We have received from the Secretary of th above the list of awards in this test, but nothin in the nature of a report, and another complai has been received this week :—

Heavy Breeds.—1st, W. Boulton, Stoke-on-Trent, £10; 2n D. Carradice, Nelson, £9; 3rd, J. T. Ellis, Preston, £8; 4t F. C. Tomlinson, Sleaford,* £7; 5th, W. R. Porrett, Launcel Stratton, £6; 6th, Miss H. Reed, Wotton-v-Edge, £5; 7t A. Snowden, Cross Hills, £3; 8th, W. F. Morris, Abbesley, £

* Winner of Members' Cup.

Light Breeds.—1st, J. T. Ellis, Preston, £10; 2nd, K. Crawford, Norwich, £9; 3rd, F. W. Flitcroft, Carlisle, £ 4th, A. Snowden, Cross Hills,* £7; 5th, J. A. Adamso Clitheroe, £6; 6th, E. Dawson, Clitheroe, £5; 7th, Mrs. Bennett, Preston, £3; 8th, W. H. Farnell, Farnworth, £2.

* Wins Members' Cup.

All prize money has now been paid, and ce tificates will be sent out at an early date.

W. CRABTREE, Secretary.

Mr. Carrington asks me to correct an error whic appeared in my little review on his farm, and f which I apologise. I stated that he had raised h flock of Leghorns to 400. This should have been h flock of *Ducks*.

CORRUGATED IRON HOUSES.

I have received the following letter from Mr. Daunton :—

"In reply to your request in 'Eggs" of last week, I have two small houses with corrugated iron roofs, but do not consider them satisfactory. As you say, they are hot and cold, and are inclined to sweat. If the roof is high you can get back ventilation, but even then they still sweat. I also have a house 80 ft. x 13 ft. 6 in. chiefly made of this material, but this house is felt lined. This seems fairly satisfactory, but I think it is colder in winter than a wooden one, and perhaps hotter in summer. The space between the felt and iron is also a harbour for mice unless this is prevented by some means. I also have two other large houses : one with tongued and grooved boards covered with felt, and the other tongued and grooved boards covered with corrugated iron. The last-mentioned is the most satisfactory of all, and, in my opinion, is worth the little extra expense. I might say that we are in a very exposed position—500 ft. high, but the corrugated iron seems to stand the gales, and I think the felt (referring to the galvanised felt-lined house) helps to spread the wind, and prevents the sheets from being blown off."

here seems to be a variety of opinion as to the rugated roofs. I am sure it is only a question adaptability, and that with a little study they ld be made quite as satisfactory, and there uld be no greater variations of temperature than ooden house. The question is how to do this. t could be made possible they would, in many pects, be far more sanitary than a wooden se, and there would be much less difficulty in ping down insect life. It is surely worth estigating.

LET RAYS AND CHICKEN DEVELOPMENT.

r. A. Robinson has been kind enough to send the following cutting from a New Zealand er.

e remarks that that part relating to the effect ommon glass upon sunshine is interesting, and perhaps account for the poor development of kens in a greenhouse, and also that the failure ntensive poultry-keeping may be attributed to

hat is quite possible, and further tests on this it would be of interest.

the Wellingham experiments, with the nsive system, we were able to remove the glass lows for several hours a day, so that the chicks d get the full benefit of the sunlight.

ne of our members writes to me on this question of stored sunlight, and adds :—

"Re keeping rats in darkness and not growing. If you worked down the same pit as me you would see some as fine rats as you ever clapped eyes on. They get no sunshine, nor moonshine, nor oranges."

I prefer to leave it at that.

Perhaps, as they say in the play, "they have become acclimatised"—not an unknown thing in nature.

VIOLET RAYS AND CHICKEN DEVELOPMENT.

Results of profound interest, though not as yet of economic importance, have been obtained by Dr. C. C. Little, of the University of Maine, and Dr. W. T. Bovie, of Harvard Medical School. During the summer 233 chickens were fed and handled exactly alike, except that some of them were kept in the open air, exposed to direct sunshine; others were kept under window glass, while still others were exposed to "ultra-violet rays." This meant that they were exposed for 15 minutes each day to rays from a mercury vapour lamp, which sent the rays through a glass made from fused quartz. This form of glass permits these violet rays to pass through it, while it has been found that common window glass "strains" these rays out of the sunshine.

For many years the value of direct sunshine has been recognised as an important factor in animal development, but only in recent years have the scientists been able to tell why sunshine is so effective. It is now known that sunshine is made up of various kinds of rays, and, after long and patient experiment, it has been found that the violet rays have a vital effect upon the living system. In a way, suggests a writer in the "Rural New Yorker," these violet rays seem to be somewhat analogous to the mysterious vitamines which are said to be so necessary to our food.

The chicks which received the full sunshine grew normally; those grown under glass developed rickets; while of those receiving the violet rays not one developed this disease. In rickets in children the bones are soft and fail to develop properly, there being a failure to deposit lime and phosphorous in the bone. No doubt this is often the cause of "leg weakness" in chicks. Of course, there are many cases in young animals and children where this failure to make bone properly is due to a defect in the diet—there being a lack of minerals in the food. In the case of these chickens, however, the food contained all needed bone-forming elements. The failure to make good growth in such cases was due to a failure in metabolism or the chemistry which is worked out in the living body. The scientists conclude that these violet rays are essential to the living chemistry through which the bone growth of the body is produced.

An illustration is given in the publication mentioned where the larger of the two chicks received a 15-minute bath of artificial ultra-violet light from a Cooper-Hewitt fused quartz lamp and weighed five times as much as the other, had perfect legs, was larger and better developed than a chicken hatched at the same time and allowed to run in the open sunlight.

Crafnant, Chester Road, Neston, Cheshire.

Dear Sir,—As a beginner, I have only just heard of "Eggs." and take this opportunity of thanking you for the valuable information contained therein.

Yours truly,
(Signed) E. COPELAND.

Long Whatton, near Loughborough.

Dear Sir,—At the same time I would like to state my appreciation of "Eggs." In my opinion it is an infinitely better paper than any of the other poultry publication.

Yours faithfully,
(Signed) C. H. KEITH JOPP (Major).

Boundary Poultry Farm, Intack, Blackburn.

Dear Sir,—I have been a reader of your valuable journal "Eggs," for a few months now, and I think it is the best Poultry Paper published.

Yours truly,
(Signed) J. BIRCH.

Diphtheretic Roup and Chicken Pox

By T. W. TOOVEY.

May I first correct a misprint in my last article? The reference to the remedies should have read "secret"—not sure.

The progress made during the last fortnight has been on the whole favourable, and, although the death rate is still heavy, the indications now are that we shall save the farm at a cost of about one-third of the birds, and, of course, all the incidental losses in eggs and greatly increased expenses. I wish to take this opportunity of thanking most sincerely my numerous correspondents for their sympathetic and advisory letters, and hope they will accept this as an acknowledgment of the same, as it is impossible for me to answer them all individually. I should like also to say, I did not presume to criticise the scientists, but only made what seems to me a statement of fact. Much work has been done in America on roup, but apparently with little result. In this country very little, so far, has been done in biological research. The amount of money allocated for research on disease out of the funds raised for the National Poultry Institute is a mere trifle, and it seems to me that it would have been far better to have devoted nearly all the funds and income to research on disease rather than to have spent the great bulk of the money on technical and nutritional experiments, work of which we already know a good deal more than we can possibly ever know, without scientific assistance, about disease.

Just as the fox acts as an instrument of repression, so must the fear of disease also act most repressively on the development of the industry. It may be that poultry production will have to be relegated to the side-issue side of agriculture, such as, in the main, are the production of butter, cheese, bacon, and even milk. The bulk of these, with poultry and eggs, are produced by thousands of farmers and small-holders throughout the world, as important factors perhaps, but not as the main stays of their occupations. I may be in a pessimistic frame of mind—excusable under the circumstances. I have, however, been carefully considering both the past and the future in relation to this experience, and trying to learn lessons.

In the admirable and kind-hearted comments of leading articles, references have been made to the conditions of my plant and methods. Bad as this outbreak has been, heavy as have been the losses, I am more concerned about the future than the past. What changes are advisable in order to lessen the risks, and what steps should be taken if another outbreak should occur, in order to reduce these losses which might easily spell bankruptcy for those who had their all invested in t undertaking?

I confess I had far too much confidence in t empirical methods employed to keep do disease, such as the treatment of the land w lime and slag in alternate years, the disinfecti of the houses, etc. If, however, roup can be co municated through the droppings, my worst fa was in allowing the laying flocks to continuou occupy the same land year after year at the ra of 250 to 300 to the acre. I also, some two yea ago, substituted lime for the Izal disinfecti powder I had previously used for so long for tre ing the houses.

I do not think the ventilation of the houses w at fault, as otherwise we should not have h twelve years' freedom from epidemics of roup.

In the first edition of my book I stated, as considered opinion, that no poultry farm shou exceed 5,000 birds in numbers, and that if furth extensions were desired they should be made in separate undertaking. I revert to that opinio and, in fact, would advise that no more than 4,0 should be kept on one farm. I also intend reduce my own flocks to this number, and to g the land rest alternate years. In my case it w mean the plant as well, which, if expensive regards capital charges, will be also an advanta I shall cut the laying fields in half, using half o year and half the other; never again will I r the risk of running an 8,000 bird farm in one un More important perhaps is it to consider what p cedure should be adopted with the first signs an outbreak. My enquiries lead me to think th this farm was by no means exceptional in havi frequent isolated cases of a mild form of roup, a that they occur on most farms. My correspon ence also indicates that roup in its more virule forms has been very prevalent, and that hea losses have been incurred on many farms. T moral to be drawn is that no poultry farm is p perly equipped unless it has the necessary hospit and convalescent homes to meet a moderate o break. It is possible then that such an outbre can be restricted.

With such an epidemic as we have had no norm hospital accommodation would be able to co but all the same we were very badly prepared even a mild attack. I confess I was very slow getting a move on, and it took some time to c struct the hospitals. I think that the hospi accommodation should be adequate to take 10 p cent. of the total stock. The hospitals here roomy, airy buildings, fitted with stages built tiers, each 2 ft. deep by 2 ft. 6 in. long. Wh the birds are apparently cured they are remo into the convalescent houses, which are sim poultry houses divided into sections with outs runs on grass. Here they remain until it is c sidered safe to remove them to the general floc These are all very well for normal conditio Here the number of patients soon overflowed pacity of the plant, and it became necessary to provise fresh arrangements. A section of the m is separated from the remainder, and poultry uses are converted into temporary hospitals by iding them into pens with wire netting 3 ft. gh; two pens for each lot of birds. By this thod a man and a boy can rapidly dip and an the mouths and eyes of the infected birds, boy catching and handing the birds from one n to the man in the other, the treated birds being ced in the second pen. Cured birds are moved o convalescent houses in this section reserved hospital work.

t is always most essential that the necessary tra labour should be found, as the normal staff nnot possibly cope with the work. The best use ist be made of the skilled poultryman, and their our supplemented by the unskilled. We have w nine men and lads working, where normally r can do the work comfortably.

As I said, I was very slow in developing this ganisation. I believe if we had got this going r months ago many hundreds of lives would ve been saved. Whether the outbreak could ve been greatly shortened as to time I cannot y, as it spread slowly, but surely, to every house. e birds undoubtedly suffer from a high fever, ir heads are very hot, and during convalescence skin peels off their faces. I hope later, with Editor's permission, to go into the remedies have found most efficient. I may say, how- r, that sulphur and sulphate of copper given ernally were not the least bit of use. One of scientific correspondents asserts that the large antities of sulphur administered actually aggra- ted the complaint, and as far as I can see he y be right.

f other sufferers will communicate their experi- ces, even anonymously, as may be quite neces- y, we may, between us, be able to do some od.

feel quite sure the disease can be cured and be stayed before complete ruin takes place, hough at one time I thought we were down and for good.

am now looking forward to a scheme of recon- uction n the autumn on smaller but safer lines.

Leylands Road, Burgess Hill, Sussex.

25th May, 1925.

ear Mr. Newman,—As a reader of your paper for several rs I think it is up to me to let you know that the articles it have been of great help to me, and I consider it of the ost value to all those who take an interest in, and want to a living out of poultry.

hen I was in the Fressian Cattle line (by the way I bred at Britain's first 3,000 gallon cow, Brookside, Colantha) I to send to U.S.A. for my literature. I have no need to do for poultry.

Yours faithfully,

(Signed) HAROLD COOKE.

Correspondence.

MARKETING OF EGGS.

To the Editor of "Eggs."

Sir,—In your issue of June 3rd your correspondents, F. G. Swan and M. R. Morris Hammond, hit the nail of actual fact on the head when they state that there is a demand ready to be supplied for eggs not more than three or four days old. It is obvious that freshness is the weapon with which British egg producers can fight foreign competitors. Commercial men can benefit themselves to a very great extent by creating a greater demand and at the same time by supplying the demand for fresh laid eggs, if they will send their supplies twice a week to the retailers.

What I mean by the above is this. There is a great opportunity in the shape of a grade A egg for the British producer to beat the foreigner, and all the producers should endeavour to supply their retailer and get them to sell the grade A egg. It stands to reason, if the retailer can make a good thing of it, then he will support the sale of grade A eggs.

If F. G. Swan has a scheme by which he can find a trader who will sell the grade A egg, it is up to us to so support him that other traders will wonder how it was they came to miss such a good thing.

I apologise for length of above, but feel strongly that support for selling the fresh egg is urgently needed if we are to compete successfully with the Dane and the Dutchman.

It is a well-known fact with Londoners that it is hard to find an egg in London which can be honestly guaranteed freshly laid.

Yours faithfully,

J. R. DOUGLAS.

MARKETING OF EGGS.

To the Editor of "Eggs."

Dear Sir,—There has been much valuable correspondence in "Eggs" recently about the marketing of new laid eggs. Generally, my experience is that neither the consumer nor the retailer want eggs by weight, so why try to force this on them? If the public want a two-ounce egg, would it not be better, and just as advantageous, to breed for an egg of that size rather than get a comparatively small flock average of large eggs, filling in the intervals by grumbling?

I think it will be admitted that the only royal road to better prices for the egg farmer is in the direction of FRESHNESS. I will assume that, at the moment at least, it is impossible to have the expression "New Laid Eggs" defined by law. Foreign and ordinary market eggs are now sold as such. We **must,** therefore, **combine** to go one better. If we can create a standard of freshness that will knock out the foreigner and higgler, and persuade or force the retail trade into accepting it, we shall be doing ourselves, **and** the public, a very good turn. But, "to cut the cackle and get to the 'osses," I sincerely hope the S.P.B.A. or National Poultry Council will do the same AT ONCE.

I suggest that the proposal for a grade A egg be adopted, defined as follows :—"Habitually despatch three times a week direct from producer to retailer and averaging not less than two ounces (or, if you like, graded to two ounces), except in the autumn, when it shall be 1⅞ ounces." I am not a small-egg crank, and can produce plenty of 2¼ ounce eggs if necessary, but I feel it would be unwise to complicate the scheme too much at first.

When you have established "Grade A," then get on to a 2¼ ounce sub-grade, etc., by all means, and I'm with you.

I suggest that the National Poultry Council, with or without the approval of the Ministry of Agriculture, is the right body to set up and boom "Grade A." Booming is undoubtedly necessary, and I suggest two channels :—

(A) By designing and printing an attractive and striking placard which the producer could buy and present to his retailer.

(B) By a few press articles. In order to cover cost of these, the poultry papers and societies should open a small subscription list, to which I for one would subscribe. Subscriptions might reasonably be asked for on a pro-rata basis.

As I have said above, I hope something will now be done, AND DONE NOW.

I am, Sir, yours faithfully,
K. M. CAVE (Major).

SALE OF EGGS.

To the Editor of "Eggs."

Dear Sir,—Just one "last sigh of the Moors" on this sale of eggs question.

Judging by "C.M.'s" letter in last week's "Eggs" the quality of friendship varies, as I also have a "friend" in the grocery business. This "friend" buys my preserved eggs, and sells them openly as "Preserved English" (I'm Scotch myself) at five a shilling.

The firm's customers see the eggs in their original preserving crates, and know therefore that they are genuine British Preserved Eggs, and, from practical experience of the firm's general run of good. and having had the same "brand" of eggs before, they pay their money. "Yes, I think so," and we are all friends together.

Whether fifty million eggs a week could be sold in this manner does not concern me one little bit, but I haven't the slightest doubt that for a long time yet there will be room for many readers o "Eggs" to do likewise. Let them stop talkin and try it anyhow.

Yours truly,
J. BURN-MURDOCH.

LARGE AND SMALL UNITS.

To the Editor of "Eggs."

Dear Sir,—As a commercial egg farmer, the firs thought that passed through my mind, after reac ing Mr. Toovey's description of the ravage disease had made among his stock was: "A these years of work and success—success whic was sufficient to inspire confidence and belief i the methods employed—all that experience ha taught count for nothing in face of such a disaste as has befallen him. His lot may be mine, o that of any other man engaged in the business o egg farming."

The controversy on the relative merits of larg versus small units will be remembered by many readers of "Eggs." If we can have a discussion **instead** of a controversy it will doubtless be wel comed by many of those who are feeling very anxious as to the possibility of experiencing such an outbreak as will devastate their farm, and ruin the work of years, as it has in Mr. Toovey's case.

If we could get down to economic facts and avoid as far as possible the generalities which have been the feature of previous discussions on the subject, we may perchance extract something of value. The controversy which took place in "Eggs" a year or two ago left me undecided, with a leaning in favour of the large unit, founded on the belief that it was the more economic The evidence was not convincing, and the time is now ripe for investigation. Mr. Morrison may write of pessimists if he will. What would be his position if he had a similar experience to Mr. Toovey?

The significant factor on which Mr. Toovey and the Editor have dwelt is, that the work of the scientists, so far as disease, and more particularly roup, is concerned, has been almost barren of results. They have not been able to indicate in what manner we could effectually fight a serious outbreak of disease. Years may pass before they are in a position to render adequate aid. Until they do, the risk remains, and it is too big for us to sit complacently by waiting for something to happen.

The economy of the large unit system is chiefly due to lower costs of establishment, and lessened cost of labour.

"H.L.S." makes a startling statement when he says it requires 7,000 eggs to produce 1,000 pullets, as compared with 1,300 to produce 300. That is the whole point of his letter. An enormous number of eggs are put down every year because of the terrific mortality by the big men of his acquaintance. If he would answer the following questions many of those who read his letter would eel indebted to him :—

(1) Is it not possible to rear 1,000 pullets from 1,500 eggs by limiting the size of the unit to 100 chicks?

(2) Does he mean that the large unit is accountable for the high mortality?

(3) Is it his belief that it is occasioned by the ack of power to control the unit of 500 chicks?

This point wants elucidating.

Or, does he believe that in mating large units the vitality of the flock is steadily lowered by breeding from inferior birds which have escaped observation?

The crux of the whole matter is, does the lower cost of establishment and lessened cost of labour, with a large unit, compensate for the increased mortality indicated by "H.L.S." in his letter of ast week, and which my own experience confirms, or is the smaller unit of 100, which you, Sir, have declared to be the most economic, to be preferred on the score of a much lower mortality and a considerably lessened risk?

I have experienced two slight outbreaks of roup within the last three years. They gave considerable trouble, but did not cause serious anxiety, and were, fortunately for me, limited to one house.

I dare not think what would have been my lot f my birds were run in units of 1,000, which is, I believe, the case on Mr. Morrison's farm and that of others in the country.

Yours faithfully,

C. E. E.

THE HERTFORDSHIRE COUNTY LAYING TRIALS.

We have received a copy of the conditions and entry forms for the Hertfordshire County Laying Trials, which are to be held at the Institute of Agriculture, "Oaklands," St. Albans.

The Trials will commence on October 15th, 1925, and will continue for 48 weeks. Full particulars may be obtained from the Principal, Hertfordshire Institute of Agriculture, "Oaklands," St. Albans

It is a pleasure to see that the Trials definitely aim at an improvement in the size of egg. The adoption of this method of scoring in the County Trials is bound to have a good effect, not only upon the size of egg, but in the course of two or three years, upon the stamina, and body size of the stock.

We must confess that we should like to have seen the minimum weights of pullets at time of despatch, which are given to guide competitors, a little larger. Three pounds for a Leghorn is rather on the small side.

The Chinchilla Rabbit for Fur.

By **H. J. GARDNER.**

BREEDING.

In breeding a stud of Chinchilla rabbits only the best stock should be used. They should be well matured, both the buck and the doe, the former eight to ten months old or older, and the latter six to seven months old. I do not like them to start breeding older, as they are inclined to get too fat. Both should be well moulted out, and in good condition.

Young stock bred from moulty parents never make strong rabbits, and cause no end of trouble and disappointment to their owner. I have seen rabbits bred from such stock which never had a clear full coat. They are also seldom robust in constitution, and are apt to succumb easily to little ailments.

The object of the breeder should be to get the rabbit to moult at the right time, and come into a beautiful full coat after each moult, and get through it as quickly as possible. This can be done with proper feeding. No matter how good the strain, it is impossible to breed good youngsters unless both parents are in fit condition.

The number of litters I like to aim for is three in the twelve months, making the start as early in December as possible. This allows one month for the period of gestation, and six weeks from the time the young are born, to the next service.

I generally take the young away from their mother at six weeks old, but if it is a large litter, say eight to ten, it is best to leave any that are small a little longer.

The Chinchilla rabbits vary very much in the size of their litters, some having two or three, others ten or eleven. Six, I find, make a nice litter, and grow up strong and healthy. Very large litters should be avoided, and if there are any weaklings in the nest it is much better to kill them off.

Breeding does must never be allowed to get too fat; they should be fed sparingly during gestation. Plenty of green should form the staple diet till after the birth of the litter, then a good substantial ration should be given and continued until the young are taken away.

Does are best bred from in their first year, if intended to be used as breeders. If they are not bred from until they are two years old or older they generally get too fat, and fail to carry their young. This even applies to young does, which are allowed to put on too much flesh prior to mating.

Does in kindle should be closely watched, and provided with ample soft meadow hay, and water should be always before them.

Handling and travelling should be avoided as much as possible, also keep the doe from having any sudden fright.

Use extra large feeding and drinking troughs for breeding does, as they have a habit of taking them to their nest, and are liable to hurt the young.

When the litter has arrived, give the doe a tit-bit to keep her employed, then look at her nest, and see all is well. Sometimes a doe will make two nests. If this happens, place all the youngsters in one. If this is not done one lot will be left to die.

Do not touch the young for the first twenty-four hours. Usually the does get to know their attendant, and do not mind being interfered with.

When starting with Chinchilla rabbits the breeder should get one strain and stick to it. On no account mix the strain. I have seen a prize doe and buck of different strains mated; the youngsters were seven in all—three white, two black, one grey, and one Chinchilla (a profitable lot!).

The craze just now is for length of coat. Why, I cannot tell, as the furrier does not want undue length, but density with fair length. Breed right, and there will be no disappointments with the youngsters.

THE NATIONAL UTILITY POULTRY SOCIETY'S NATIONAL EGG-LAYING TEST.

Report for the Seventh Month—18th April to 13th May, 1925.

The seasonal decline in production commenced during the seventh month, the record for that period being 39,819 eggs, as compared with 42,082 in the sixth month.

Although the decline was general, it was naturally most pronounced amongst the heavy breeds, owing to the increased prevalence of broodiness, as many as 416 birds (13 twice) of that class requiring treatment, whereas of the light breeds only 28 were broody. Very little difficulty was experienced in breaking the desire to sit, and usually three days in the broody coop was found to be sufficient for that purpose. Ten birds laid 28 eggs in that period.

There was a slight reduction in the average size of the eggs, as is general at this time of the year, and which was most marked during the spell of very hot and dry weather. With the return of rainy weather, an improvement was again noticeable

With the exception of one case of Diphtheria, which was at once isolated, and is responding to treatment, the health of the flock has been very good.

EGG PRODUCTION OF LEADING PENS.

Total Scores to date:—

Section 1. Championship (Ten Pullets).—G. B. Metcalfe, Lechlade, Glos., 1334; Frank Snowden, Cowling, Keighley, 1236; Leslie Williams, Liss, Hants, 1200; Miss Nellie H. Bell, Ightham, Kent, 1186; R. A. and A. M. Johnson, Chalford, Glos., 1133; W. Crabtree, Twiston, Lancs., 1124.

Section 2. White Leghorns (Five Pullets).—Fred W. Weeks, South Woodham, Essex, 655; Mrs. E. A. Pallant, Ipswich, 651; Mrs. E. M. L. Knight, Salisbury, 628; Balsham Manor Farm, Linton, Cambs., 616; Clophill Poultry Farm, Ltd., Ampthill, Beds., 612; Easton Poultry Farm, Norwich, 611.

Section 3. Black Leghorns (Five Pullets).—W. Measures, Sharnbrook, Beds., 591; E. Watkins, Cross-in-Hand, Sussex, 588; Mrs. E. Mignon Clay, Long Preston, Yorks., 585; The Misses Allday and Rawson, Peterborough, 573; Roland Garrett, Wheathampstead, Herts, 567; C. L. and J. A. Thompson, Holywell, N. Wales, 561.

Section 4. Any Other Light Variety (Five Pullets).—P. K. Berry, Market Harboro', 619; Molassine Co., Ltd., Twyford, Berks, 542; J. H. Thompson, Alton, Hants, 541; Robert West, Thornton-le-Fylde, 525; J. E. Hughes, Ware, Herts., 508; J. R. Joy and Co., Rotherfield, Sussex, 508.

Section 5. White Wyandottes (Five Pullets).—G. Keith Simmons, Honiton, Devon, 708; A. K. Spiers Alexander, Norwich, 695; J. T. Finn, Mayfield, Marple, Cheshire, 644; Miss Hastings Irwin, Colchester, Essex, 632; W. and T. Salt, Leicester, 627; Chisbury Poultry Farm, Godalming, Surrey, 625.

Section 6. Rhode Island Reds (Five Pullets).—H. John Berry, Ottery St. Mary, Devon, 681; Arthur Gawthropp, Northampton, 651; Lady Dorothy Fraser, Leicester, 644; J. B. V. and W. Cummings, Penicuik, Scotland, 632; John Beamish, Dolgelly, N. Wales, 615; Marchioness of Graham, Isle of Arran, Scotland, 604; Lady Seely, Arnold, Notts, 604.

Section 7. Sussex (Five Pullets).—T. Brooksbank, Hedon, E. Yorks., 614; F. Rossall-Sandford, Shrewsbury, 614; Mrs. E. M. L. Knight, Salisbury, 608; Mrs. M. B. Cowley, Abingdon, Beds., 572; Mrs. M. G. Alston, Buntingford, Herts., 563; H. S. Godsmark, Ashford, Kent, 544.

Section 8. Any Other Heavy Breed (Five Pullets).—A. M. Kemp Gee, Chesham, Bucks., 583; A. A. Plimpton, Beverley, Yorks., 578; A. Clarence Shuttleworth, Keighley, 561; Miss Harrison Bell, Welwyn, Herts., 556; Marchioness of Graham, Isle of Arran, Scotland, 551; Oscar C. Brown, Scunthorpe, Lincs., 545.

The Laying Test is open to visitors on Tuesdays and Saturdays, between the hours of 2.0 and 4.0 p.m., and at other times by special appointment with Mr. J. N. Leigh, Dodnash Priory Farm, Bentley, near Ipswich.

THE YORKSHIRE FEDERATION OF POULTRY SOCIETIES' INTERNATIONAL LAYING TEST, 1924-25.

Report for the Eighth Month—May 2nd to May 30th, 1925.

The Management Committee report that it has now been settled that the "Daily Dispatch" Gold Cup will be awarded this year to the pen in Class A., which has the highest money value credited to it at the close of the Test. The Gold Cup is to be awarded in place of the "Mrs. Clay" Silver Cup, which will be awarded to the second highest pen in Class A.

Egg production has passed the highest point for this year, and the eighth month's average is 20 eggs per bird. A good many birds have passed through the broody coops, though there are only five pens of Leghorns amongst them. There have been changes in Class A. positions in every section except the White Wyandottes. The leading pens for eggs this month are Pen 3 (W. Barron's), and Pen 14 (H. Reynard) with 121 eggs each, closely followed by Pen 9 (Lord Dewar) with 120, Pen 27 with 120, and Pen 19 with 118 eggs, the last two both being R. Rodwell's. Over 100 eggs have been laid in each of 44 pens. It is to be feared that several competitors would like to see their Reserve Bird in place of a competing one, and Mrs. Mallet this month, through the substitution of her Reserve, has jumped eight places in her Section, and 31 in her Class A. position. This is the second month that Bird 298 (Latham and Son) has laid 28 eggs. In addition to the five birds (including two in one pen) which have laid 28 eggs, nine bird have laid 27, and 21 birds 26 eggs each.

Hon. Secretary: Mrs. VOWLES, Beningbrough, York.

The leading pens to date with their records and positions, are as follows:—

Class A. Section 1. White Leghorns.—Mrs. Clay, Long Preston, 805; R. H. Fryers, Bradley, Keighley, 771; R. Rodwell, Nelson, 742.

Class A. Section 2. Black Leghorns.—R. Rodwell, Nelson, 743; A. White, Malpas, Cheshire, 677; Mrs. Clay, Long Preston, 655.

Class A. Section 4. White Wyandottes.—Dr. J. E. Helm, Newchurch, in Rossendale, 724; A. Snowdon, Pool, Leeds, 741; Mrs. Clay, Long Preston, 667.

Class A. Section 5. Rhode Island Reds.—Sutton and Son, Little Hoole, Preston, 687; M. A. Hindmarsh, Skelton, York, 631; T. Gardner, Garstang, 591.

Class A. Section 6. Any Other Variety (Heavy).—Davey and Son, Sutton, Keighley (L.S.), 730; Wright and Fortune, Keighley (Bf. R.), 642; J. N. Readman, Howden (Bf. R.), 569.

Class C. Section 9. Any Variety Light Breed. Single Bird Section.—Wm. Wharton, Keighley (W.L.), 161; Mrs. E. Kaye, Poole, Leeds (W.L.), 159; R. and A. Johnson, Chalford, Glouc. (W.L.), 154.

Class C. Section 10. Any Variety Heavy Breed. Single Bird Section. — M. E. and A. Robinson, Bawtry (L.S.), 191; Alf. Sawyer, Crosshills, Keighley (R.I.R.), 148; Mrs. Hawkesworth, Pool (W.W.), 154.

THE SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

APPLICANTS FOR MEMBERSHIP.

Crosby, Walter F., White House P.F., Eastchurch, Kent.
Thomas, Lt.-Col. S. F., Temple Farm, Brenchley, Kent.
Andrews, C. F., Carmsure Farm, Comber, Co. Down, Ulster.
Flear, R. H., Bosanath, Mawnan, Falmouth.
Woodcock, R. J., The Nettleton Egg Farm, near Caistor, Lincs.
Widdop, Roy D., "Holmleigh," Grange Rd., Wareham, Dorset.
Holland, John, 27, Harwood Rd., Rishton, near Blackburn.
Grimshaw, John, 14, Spring St., Rishton, near Blackburn.
Hothersall, Arthur, 77, Stourton St., Rishton, near Blackburn.
Lythall, S., Brook St., Enderby, Leicester.
Kingswell, J. Goodall-, Copped Hall Farm, Winsor, Woodlands, Southampton.
Wiehe, E., "Labourdonnais," Mapou, Mauritius.
Riseley, W. J., Saskatoon Poultry Ranch, Nine Mile Ride, near Wokingham, Berks.
Ruddock, Wm., Ruston P.F., Melton Rd., Wellerby, E. Yorks.
Dawson, Wm. B., 10, South View, Annfield Plain, Co. Durham.
Beattie, Arthur, 38, Highfield Rd., Stoneycroft, Liverpool.
Tyre, H. M., Hawthorn Cottage, Nitshill, Renfrewshire.

Galen House, Nightingale Road, Guildford.

Dear Mr. Newman,—I have six White Leghorn hens, and have profited by the advice given in "Eggs" to a very gratifying extent.

Yours truly,
(Signed) E. M. WAIND.

Some Fruit-Growing Notes

to help Poultry-Keepers.

By F. W. WHEELER, F.R.H.S.

FRAGMENTS.—Perhaps my notes to-day are t strictly fragments — i.e., "unfinished rtions," as a definition of the word is given, but re in accordance with the other meaning of the rd "pieces broken off," for I want to touch on a few points not altogether incomplete in them-ves, but rather to be regarded as "pieces" that towards completing the whole of the wide sub-t which is being dealt with in these fruit-growing tes.

This present spell of dry weather reminds us of tain portions of our work which should not be glected, and which through the summer months y claim our attention more than once. Firstly, ATERING—an important piece of work which is y necessary under certain conditions. I am a believer in a free use of the watering-can en in dry weather, and in my vegetable and wer garden I severely leave it alone, except for ecial cases: (1) When moving plants; (2) at the e of bedding out young stuff; (3) or soaking bed of cuttings, or the bed of transplanted seedgs an hour or so before moving them into their manent quarters.

think it far more important to keep a fine tilth soil around the plants and bushes for conserving moisture, rather than surface watering. When have to water, do it thoroughly, and again the surface, which generally drys and cracks er watering.

oming to fruit trees, there are certain times l conditions which call for us to apply water as l as to hoe or to mulch. I am referring in par-ilar to the trees trained on walls or growing r them, for it will be easily noticed how dry the und remains under the shelter of a wall even er heavy rains. The call for water in these es also comes when the young wood growths m to make no progress, or again, when a good p of fruit is naturally drawing heavily on the isture and wants help to make it swell up, but not give it in those harmful driblets. A good ering from time to time according to circum-nces before the soil gets really dry, and thus id having to apply water so heavily that the t would start cracking, for we have probably noticed this "cracking" even to fruit grown he open, which comes after we have had extra vy rain following a long dry spell. I have seen same thing in the tomato house when water- was not regulated correctly. (Of course, other gs will cause cracking of fruit, such as apple pear scab.)

is likewise advisable to help fruit trees carry- a good crop by giving a liquid manure, but it should not be applied while the soil is dry unless the ground is first of all moistened by clear water. Here the advantages of the summer mulching comes in, for the dressing of a light sweet material will conserve much of the moisture in the soil, and the rains will wash down the nourishment for the roots to draw on.

Another point before we leave the subject of water, and, in passing, I would like to say that while writing these notes to-day I have more in mind the fruit gardens than the large orchards.

Water applied to the foliage is at times quite as beneficial as that given to the roots. To keep the syringe going in the evenings and thus have the foliage in a clean and healthy condition is worth a lot towards success. Clean water only is good, but better still occasionally using one of the many prepared mixtures, "Abols" or "Summer Wash," or others containing soft soap, quassia, nicotine, etc.

You have probably noticed the tremendous help of overhead spraying to newly-planted things, and for obtaining success with rose bushes, and even to some vegetable crops; certainly fruit trees will be greatly assisted, likewise the gooseberry and other bushes.

Keep an eye open for mildew on the gooseberries, and do not let it spread. There are special sprays to prevent this and for killing the summer spores. If only a light attack, then a dusting of green sulphur powder is often sufficient, so have some of this handy, as it is useful should adverse weather cause an outbreak of mildew in our little tomato houses. More of the "Fragments" to follow shortly.

What our Readers think of "Eggs."

Cumrew, Heads Hook, Carlisle.

Dear Sir,—In conclusion may I take this opportunity of expressing my appreciation of "Eggs" with hearty congratulations to the Editor.

Yours faithfully,
(Signed) J. T. POYNTER

Oldfield, Eversley Park Road, Winchmore Hill.

Dear Sir,—I may say I have only just discovered that "Eggs" is just the book I have been looking for.

Yours truly,
(Signed) J. DAFFARN.

Cherry Orchard Cottage, Bromley, Kent.

Dear Sir,—I must, in conclusion, express my deep gratitude to you for the sound advice you give in "Eggs." It has been of the greatest use to me, and my chicks and adult stock are all raised and fed on your formulas, to my considerable profit and the birds' health and stamina.

Yours very truly,
(Signed) HERBERT BINNEY.

Whiting Farm, Roman Road, Guston, nr. Dover.
22nd May, 1925.

Dear Sir,—Without any doubt your paper "Eggs" is unique and in every way a road to make Poultry farming a success.

Yours faithfully,
(Signed) G. F. H. PRICE.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING FRIDAY, JUNE 12th, 1925.

GRAIN AND FEEDING STUFFS.—British wheat is in rather better supply, but with a slow demand is slightly cheaper at Hull and London, the average quotation now being 13s. 1d. per cwt. Imported wheat is a dull trade at easier rates. Grinding barley meets with little enquiry, but both British and imported descriptions are practically unchanged in value. Home-grown oats sell at recent prices and foreign are unaltered, except Canadian, which have a dearer tendency. Maize is in moderate supply, and with a fair demand recent quotations are generally maintained.

Bran is in little request and cheaper at all markets except London, the average price now being £6 17s. per ton as compared with £7 6s. last week. Coarse middlings also meet a quiet trade, and at Bristol and Liverpool quotations have declined 2s 6d. and 5s. per ton respectively on the week. Meals generally show little change in value, but maize products are dearer at London. Oilcakes are mostly unchanged, but English-made Egyptian cotton seed cake is reduced at London from £8 10s. to £8 5s. per ton.

MILLERS' OFFALS.—Bran (British): Bristol, £7 5s; Hull, £6 12s; Liverpool, £7; London, £6 12s. Broad Bran: Bristol, £9 5s; Hull, £7 12s; London, £8 15s. Middlings—Fine (Imported): London, £9 5s; Coarse (British): Bristol, £8 17s; Hull, £8 5s; Liverpool, £8; London, £7 15s. Pollards (Imported): Bristol, £7 10s; Hull, £7 5s; Liverpool, £7; London, £7 5s. Rice Bran: Bristol, £7 17s; Liverpool, £7 5s. MEAL.—Barley Meal: Bristol, £12; Hull, £11 13s; London, £12. Maize Meal: Bristol, £12 17s; Hull, £11 15s; Liverpool, £11 7s; London, £11 10s. Maize Meal (S. African): Bristol, £11; Hull, £10 5s; Liverpool, £9 17s. Maize Germ Meal: Bristol, £11 10s; Hull, £10; London, £9 10s. Maize Gluten Feed: London, £10. Locust Bean Meal: Bristol, £9 15s; Hull, £9 15s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 18s; London, £13. Fish Meal: Bristol, £20 10s; Hull, £19; Liverpool, £18 10s; London, £19 10s.

EGGS AND DEAD POULTRY.

British eggs are again offered in smaller quantities, but with only a moderate enquiry prices have an easier tendency. Best imported descriptions continue in short supply and values generally are unchanged. Poultry prices show little variation, trade ruling good for the best quality birds on offer.

Week-end Prices—Eggs (per 120): British, 13s 9d, 12s 9d; Irish, 13s 9d, 13s 0d; Dutch, 15s 6d, 14s 9d; French, 15s 0d, 14s 6d; Belgian, 14s 0d, 13s 6d; Lithuanian, 11s 6d, 11s 0d; Egyptian, 7s 6d, 7s 0d; Russian, 10s 3d, 8s 9d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 6d; Irish, 1s 8d, 1s 2d; Others, 1s 10d, 1s 4d. Ducks, 1s 9d, 1s 6d.

EGGS.

Per Doz.—Ashford: First, 1s 7½d; Second, 1s 6d. Birmingham: First, 1s 4¼d; Second, 1s 4d. Bridgwater: First, 1s 4d; Second, 1s 3d. Chelmsford: First, 1s 6½d; Second, 1s 5½d. Colchester: First, 1s 6d. Doncaster: First, 1s 6d; Second, 1s 5d. Dorchester: First, 1s 3½d; Second, 1s 2½d. Exeter: First, 1s 5d. Hereford: First, 1s 2d. King's Lynn: First, 1s 6d; Second, 1s 5d. Llandilo: First, 1s 2d; Second, 1s 1d. Mold: First, 1s 3d; Second, 1s 2d. Montgomery: First, 1s 1d. Newport (Mon.): First, 1s 4d; Second, 1s 3d. Norwich: First, 1s 7d. Oswestry: First, 1s 2d; Second, 1s 1d. Penzance: First, 1s 3d; Second, 1s 2d. Saffron Walden: First, 1s 6½d. St. Ives (Hunts): First, 1s 4½d; Second, 1s 3d. Salisbury: First, 1s 3½d; Second, 1s 2½d. Skipton: First, 1s 4d. Truro: First, 1s 3d. *Carlisle: First, 1s 4d *Derby: First, 1s 4d. *Ipswich: First, 1s 6d; Second, 1s 3d. *Lincoln: First, 1s 4d. *Shrewsbury: First, 1s 2d; Second, 1s 1d. *York: First, 1s 5d; Second, 1s 4d.

FOWLS.

Per lb.—Birmingham: First, 1s 7d; Second, 10d. Doncaster: First, †5s 0d; Second, †4s 0d. Exeter: First, 1s 7d. Hereford: First, 1s 7d. Llandilo: First, 2s 5d; Second, 2s 3d. Newport (Mon.): First, 1s 9d; Second, 1s 4d. Truro: First, 1s 4d. *Derby: First, †5s 6d; Second, †4s 0d. *Ipswich: First, 2s 0d; Second, 1s 10d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 1s 4d. *York: First, †5s 6d; †4s 6d.

DUCKS.

Per lb.—Birmingham: First, 1s 8d; Second, 1s 6d. Doncaster: First, †5s 0d; Second, †4s 0d. Exeter: First, 1s 7d. Hereford: First, 1s 6d. Llandilo: First, 2s 5d; Second, 2s 3d.

* At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retailers. † Per head.

"Eggs."

The Official Organ of the Scientific Poultry Breeders' Association.

Wednesday, June 17th, 1925.

CONTENTS.

EDITORIAL ... ...
MODERN POULTRY FEEDING ... ...
ANSWERS TO QUERIES ... ...
POST-MORTEMS ... ...
S.P.B.A. ... ...
DIPTHERETIC ROUP AND CHICKEN POX ... .
CORRESPONDENCE ... ...
THE CHINCHILLA RABBIT FOR FUR ... .
THE NATIONAL U.P.S. EGG-LAYING TEST ... ...
YORKS. FEDERATION OF P.S. INTERNATIONAL LAYING TEST ... ...
SOME FRUIT GROWING NOTES ... ...
MARKET REPORT ... ...

Contributions.—The Editor will always be pleased to consi contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existe of "Eggs" to the poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Str London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first p of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it imperative that new advertisements and alterations are rece by FIRST POST ON FRIDAY MORNING to ensure insertion in following Wednesday's issue. It is hardly necessary to add t the earlier in the week we receive copy the better it is for eve one concerned.

PROOFS.

We cannot guarantee to submit proofs unless co plete copy is to hand by FIRST POST ON T MONDAY PREVIOUS TO THE FOLLOWI WEDNESDAY WEEK'S ISSUE.

EGGS

THE OFFICIAL ORGAN OF THE
Scientific Poultry Breeders' Association

WEDNESDAY, JUNE 24th, 1925.

Editorial.

SOME INTERESTING POINTS FROM OUR READERS.

The following is an extract from a letter received 'rom one of our readers some little time ago :—

> "My idea in giving Epsom Salts is as a preventive against fatty degeneration, and colds and roup, working on the lines that prevention is better than cure, and the best foods are the cheapest in the long run."

As far back as we can remember, the weekly lose of Epsom salts has been recommended ; on vhat grounds we have yet to discover. No one ould ever give definite proof that the birds ever erived any benefit from it. The belief in it gained trength from repetition, and it became a parrot ry with those who gained their knowledge of oultry-keeping from what others had written ather than from any experience of their own. 'ears ago it was the common practice to give the ewly-hatched chick a peppercorn, the only explanation that one could get was, "it warms 'em p." We are told that Epsom salts "cools the lood." What object there can be in cooling the lood of a fowl in normal health we have never yet iscovered.

Our correspondent is scarcely logical, fatty deeneration is a disease from which individuals in flock may suffer rather than the flock itself. It scarcely to be prevented by a mild dose of alts once a week ; any such individuals are hardly kely to prove profitable, and would be much better the pot. Why it should be imagined that an perient will act as a preventive of roup or colds e cannot understand. This constant dosing is r more likely to impoverish the blood and render ie birds more susceptible to disease than to prevent it. In some cases we have known actual ischief to arise from the practice, notably with a rge flock of White Leghorns some few years ago, hich some novice dosed to such an extent that e pullets were thrown into a moult in May, and quired a lot of careful feeding and dosing with on before they were pulled round. We can be rfectly sure that Epsom salts cannot be given e flock as a preventive of fatty degeneration in e individual without detriment to the flock, and at it will not prevent outbreaks of roup or colds. With sick birds it is useful—to give it to those in normal health is foolish. An ounce of fresh green food is worth a ton of salts.

We will take an extract from another letter, on a different subject :—

> "I am advised by a friend that size is opposed to egg production. What should a good layer weigh?"

The question we will leave. The letter was obviously written by a beginner, but the statement that size is opposed to egg production is constantly being made, and is firmly believed by many people. There can be no greater mistake, the reverse is the case. A bird is not a good layer because she is small, but she may be small because she is a good layer, or is bred from good layers.

> "The upper limit of the size of an animal is determined by heredity. The stature to which an animal may actually attain within the definitely fixed limit is directly related to the way in which it is nourished during the growing period."—(Waters.)

We can appreciate that a highly-fecund pullet which matures early sexually—that is, lays its first egg during the period which is normally devoted to development—will be turning the food which should be devoted to bodily development to eggs, consequently she cannot reach the upper limit of the size she has inherited, because she is not being sufficiently nourished for that purpose by the food she has consumed. Her low-fecund sister on the other hand turns all the food she has consumed to body building, and is thus able to attain the size she has inherited.

The third question is a curious one. The writer says :—

> "I keep Rhode Island Reds and White Leghorns. Some of the latter have come with reddish feathers, and I could not account for it, as there was not the slightest possibility of the breeds being crossed. An old hand on the farm says that it is due to the chicks being hatched **opposite** the pen of Rhode Island Reds. I have heard of 'imagination' and pre-natal influences, but could this be possible? My man says there is 'scripture for it.'"

Some years ago we had a very similar question to this, but, although the idea that characters may be impressed on the foetus through the imagination or strong mental impression of the mother was widespread at one time, we did not think it still existed. It is now known to be an utter impossibility. In the case of hens it must be still more impossible, for it would mean the exertion of the influence upon the ovum itself. The explanation of the red feathers in the White Leghorns is a comparatively simple one, and has no relation to the proximity of the R.I. Reds at hatching time. Red pigment exists to a greater or lesser degree in all white fowls, and a particular mating may bring it strongly to the fore if both male and female had it strongly in reserve.

The fourth question relates to the introduction of fresh blood. The writer says :—

> "I have bred in line for three years, and am so far satisfied. What I want to know is, will it be advisable for me to introduce new blood next season, or can I go on indefinitely?"

He has neglected to say for what purpose he is breeding. The question as to whether he can go on indefinitely or should bring in new blood next season must be determined by the stock. It is not a question of time, and "when" will be decided by certain indications for which those who are line-breeding must ever be on the alert. They do not as a rule exhibit themselves externally, usually the first indication is infertility; this will be followed by poor hatchability and rearability. It is unfortunate that this stage is often reached by the line-breeder before he realises it, attributing the infertility to some other cause than the mating of inferior individuals. If the writer is breeding for egg production, he will be wise to introduce new blood next season, making himself perfectly sure of the history of the individual on the lines suggested in the article on Line-Breeding and Egg Production, which appeared in our issue of April 29th.

LANCASHIRE FEDERATION OF UTILITY POULTRY SOCIETIES' LAYING COMPETITION,

Held at the Lancashire County Council Farm, Hutton, under the supervision of Mr. C. H. Dobbin, the County Poultry Instructor, the following birds have laid over 160 eggs to date, viz.:—Nos. 112, 79, 62, 27, 39, 1, 18, 143. All these are Leghorns; none of the heavy breeds have reached this number. There is a decided improvement in the health of the birds, but several are still in hospital with roup. The following societies' members have visited the test during the month:—Rawtenstall, Runworth, and Horwich.

Eighth Month's Report—30th April to 27th May.

The following are the leading position in each section, showing number of eggs and points for the eight months:—

Section 1. White Leghorns, Large Breeders (Three Birds).—E. Cam, 451, 2629; R. Beesley, 450, 2536, J. Booth, 457, 2500; A. C. Harrison, 412, 2305; W. Hamnett, 302, 2301½, J. Sutton, 417, 2152.

Section 2. A.O.V. Light Breeds. Large Breeders (Three Birds). O. Rawlinson, 433, 2260; Mrs. J. H. Hill, 285, 1439; F. Lord, 283, 1331½; J. P. Willacy, 264, 1317; T. W. Gardiner, 275, 1262; Ryder and Berry, 244, 1126.

Section 3. White Wyandottes, Large Breeders (Three Birds).—C. Bates, 433, 2532; J. R. Dawson, 387, 2254; P. Williamson (two dead), 348, 2139; Mrs. Sefton, 403, 2136; W. Hamnett, 354, 2071; F. Holden, 378, 2054.

Section 4. A.O.V. Heavy Breeds, Large Breeders (Three Birds). F. Harvey, 413, 2386½; W. Weardon and Sons, 392, 2157; A. T. Walker (one dead), 373, 2091; T. Braithwaite, 346, 2036; T. Edmundson, 355, 2009; G. Cobham, 390, 1944.

Section 1. Light Breeds. Small Breeders (Single Birds).—J. Stanley, 138, 845; W. Ashton, 143, 822; W. Fletcher, 143, 800; F. Wilkinson, 168, 799½; G. A. Wolstenholme, 136, 778; O. R. Lees, 136, 764.

Section 2. Heavy Breeds. Small Breeders (Single Birds).—J. W. Pearson, 159, 955; W. R. Robinson, 118, 693; H. Harrison, 133, 693; D. Braithwaite, 131, 681; A. D. Walton, 130, 642; Mrs. J. A. Mellor, 118, 586.

Modern Poultry Feeding

By TOM NEWMAN.

GRAIN *v.* MASH.

A member writes: "I am wondering whether a discussion in 'Eggs' would be profitable as regards Grain *v.* Mash consumption. I feel that the grain feeding item is so expensive that if one could employ the Vineland methods in the summer of gradually reducing the grain a great saving would be effected if the egg yield holds."

The point is an interesting one. We have no experimental work to guide us in this direction, and, needless to say, much would depend on the composition of the mash. It will be remembered that with the first Wellingham experiments the chicks were reared from the shell on mash, had no grain until they were at least 21 months old, and this was only given them when they went broody. They were exceptionally wel developed, laid well, and the eggs averaged over 2¼ozs in weight, many of them exceeding 3ozs. It must not be inferred that I connect the size of egg with the feeding solely of mash, it merely indicates that it was fully maintained, in spite of the fact that no grain was fed. My own experience has been—and this is confirmed by a large number of letters received after the advice has been given in these columns—that there is annually a very considerable drop in the number and size of eggs towards the end of May, and this can be to a very great extent prevented by feeding maize fairly heavily as grain. By this means an early moult is often prevented, and the birds kept in production for a longer period. However, one must judge by the actual condition of the birds, and in some cases it is not necessary. To come back to the point, there is no reason to believe that production would suffer, if the birds could be induced to consume enough mash. The best plan would be to give dry mash all day, and supplement this by wet mash at night as a substitute for the deficiency of grain. There is, of course, the question of labour, and whether that would be compensated for by the difference in the cost of mash and grain feeding I cannot say. I am quite prepared for some one to write and say that fowls have gizzards and these will become atrophied if grain is not fed but having seen birds in perfect health and production, which have never had grain nor grit supplied for a period of two years, I am not going to worry abou that gizzard. The composition of the mash would, o course, be very important, as it must contain sufficient carbonaceous foods to compensate for the lack of grain.

BARLEY.

A letter from Hereford. The writer asks if it is tru that barley causes liver disease, and if not could he use it, and what grain would it best replace. It is an old, old question; the idea that barley caused liver disease has been handed down from generation to generation. It will not cause liver disease if it is not fed to excess, any more than any other grain will do so. I have so often pointed out that all these ideas as to certain grains or meals causing liver disease were the result of the unfortunate combinations used by our great grandfathers, whose precepts were taught years after by writers in the poultry press, and would have been now if we had not taught what a fallacy it was in " Eggs." The combination of toppings, barley meal and potatoes, which was commonly fed in those days with whole maize as grain, to birds whose average output was 70 eggs a year, necessarily resulted in an overfat bird with a tendency to liver disease. Now conditions are different. A heavy producer can dispose of any surplus fat by way of egg yolk that is within reason. Barley is a very useful grain, not so digestible as maize, but it could replace it if prices are right. If barley meal is used in place of maize meal care should be taken that it is finely ground. Many samples contain too much husk, and it is often adulterated.

POTATOES.

This brings us to the question of potatoes, and how they can best be used. They have been much abused, both in their use and by writers on feeding. Of course, liver disease has been attributed to them. It is advisable to remember that they are deficient in the calcium salts and in protein, so these must be provided for in the mash. Where it is possible to get the cabbage, the following will make an excellent mash :—Two parts cabbage, six middlings, three potatoes, one meat and bone meal or fish meal.

This is a case where pollard might be used in place of middlings.

Another formula will be :—One part each bran and alfalfa, six middlings, three potatoes, one meat and bone meal or fish meal.

Or again :—One part each malt culms and bran, six middlings, three potatoes, three-quarter part meat and bone or fish meal.

Only in the first mash could pollard be substituted for middlings. In a cooked mash of this kind full use should be made of the water in which cabbage and potatoes are cooked, as these contain the valuable mineral salts. In mashes containing a big proportion of vegetables the mistake is often made of feeding them in too sloppy a condition. This should not be, as it causes serious digestive trouble. Pure meat meal should not be used with the above formulas, as it is very deficient in the calcium salts. Potatoes are valuable in fattening, and for this purpose can, of course, be used in much larger quantities; boiled and mashed and mixed with sour skimmed milk the birds eat them readily. A little salt should be added. Much better results will be obtained if the skimmed milk is used, and should always be sour, as this leads to increased appetite. If we can once get out of our minds the idea that any particular food is bad, or will cause liver disease, feeding might be a little more varied and cheaper. A little better knowledge of food values would enable us to supply the deficiencies of the one, or counteract anything which might cause trouble in another.

Scientific Poultry Breeders' Association.

Full particulars of membership will be sent by return on application to the Secretary, Mr. Tom Newman, The Beeches, Rudgwick, Sussex.

WHICH PARENT TRANSMITS FECUNDITY?

A very definite statement is made in " Poultry Idea " by a Mr. Metzgar to the effect : That pullet fecundity must be transmitted from the sire, and no pullet is a better bird than her daddy's mother.

I think there will be few of us who would care to accept such a statement as this. In fact, I think we could very definitely prove that Mr. Metzgar is wrong, for if a pullet was never better than her sire's dam then progress would be impossible.

No one who has trap-nested for a number of years could fail to be in a position to disprove this statement, and there is plenty of evidence now to prove that a hen may transmit her fecundity directly to her pullets.

One of our readers wrote to me recently and stated that if it has been definitely proved that the female can transmit her fecundity directly to her daughters, then the value of the male is not such an important point as we have believed it to be, and the old belief that the male was more than half the breeding pen is dissipated. In this he is undoubtedly wrong. The male will be of as great importance as ever, but I think the fact that we have discovered that the female can transmit her fecundity to her daughters direct, supports my theory that high fecundity is not an inherited factor, but is simply the power to give full expression to the character fecundity, and the limits of this power depend on the physical constitution of the bird.

Perhaps one of these days we shall be in a position to test it.

IS THERE A 300-EGG HEN?

This has been queried by Mr. H. C. Adams in Virginia. He states :—" There never has been and never will be a 300-egg hen. There may have been early-hatched pullets that have laid 300 eggs in a period of twelve months, because during this period of their first year some don't moult. Every hen spends 60 to 90 days of each year moulting, at which time she is non-productive. Taking the minimum of 60 from 365 would be 305 days, and I am sure there is no man who would believe any living hen would be able to lay 300 eggs in 305 days."

The Editor of the "Poultry Tribune" quotes this and also quotes Mr. Metzgar, who writes to the same effect. He adds :—"Perhaps it would be as well to state, in addition, that both these gentlemen also find a great deal of fault with the advertising of 300-egg strains, and in this I believe every man who has the welfare of the poultry industry at heart will join with them and say, 'Amen.'"

THE MALE BIRD.

Such a number of questions have reached me as to what to do with the male bird when the breeding season is over. The old advice was that he should at once be removed from the pen, as he is badly in need of a rest, and kept away from the hens until mating time comes again. This is undoubtedly a mistake; when this is done the male often proves sterile the following season, this has been proved time and again. The only time to remove him is for a short period during the moult, after that he should be permitted to run with his mates. Some years ago Gowell tested long versus short mating at the West Virginia Agricultural Station. In the long matings, where the male and females ran together all the winter, 1,529 chicks were hatched from 3,240 eggs incubated; from short matings, where the male and females had not been together until the mating season, 1,075 chicks were hatched from 2,160 eggs. The observation was made that this slight difference should not be interpreted as meaning there are advantages in short over long matings.

CONTINUOUS HATCHING.

A correspondent from Thetford asks :—

> "Will you please tell me why one should not continue the hatching season right on until the end of the summer, or even hatching the whole year round? We are told that it generally takes, for the heavy and light breeds, from eight to six months to mature. Am I right in stating that it is all a question of affecting the moult? I have now been poultry farming three years, and I find that when eggs are cheapest is always my best financial period. I can just about hatch my own for the winter months. To sum up, why should it not be a paying proposition to have pullets coming into lay at any season of the year? The same applying to cockerels for killing purposes?"

We have long ago discussed this question of continuous hatching in "Eggs."

In answer to the writer. In the first place, if you want eggs all the year round, you could easily manage this by hatching pullets continuously from the 1st of February until the end of April. In the second, your May, June, July and August chicks lack the vitality of the earlier hatched ones; they would come into lay when eggs are cheap, their eggs are usually smaller and fetch lower prices, and they would moult at the same time as the earlier hatched chicks, so that instead of getting twelve months' laying we get seven or eight, and in some cases not as long as that.

If my correspondent once tested the weariness of hatching all the year round, I do not think he would be likely to be an advocate for it.

What we really want now is a test as to the value of the early-hatched chick as compared with the later, and when I am speaking of later in this case I mean March for heavy breeds and April for light.

One of these days we may get the S.P.B.A. to carry out this test. Personally, I should like to hatch a number of pullets in November and test them from the profit point of view.

MIDLAND FEDERATION OF FEATHER AND FUR SOCIETIES.

On Friday evening last, the 12th inst., the Council Meeting of the Midland Federation of Feather and Fur Societies was held at Handsworth, Birmingham, and a busy season's work for the forthcoming year was outlined.

The arrangements in connection with the outing to Wembley on July the 18th were confirmed. The train leaves the Midlands at about 7 a.m., and everything that will add to the comfort of intending visitors is being arranged. Members and friends are cordially invited.

The names of the delegates to represent the Federation at the National Poultry Parliament were endorsed, the members selected being Mrs. King, Mr. M. H. Brady, Mr. A. H. Brain, Mr. H. R. Parsons, and Mr. W. H. Sershall.

Owing to the difficulty in obtaining a suitable site in time for the Seventh Midland Laying Test, 1925-6, it is proposed to conduct this at the present grounds. The runs are in splendid condition, and the houses and enclosures are in tip-top order. Investigations are still being made, and immediately a suitable spot is found, arrangements will go forward. In the meantime, the particulars are being put in hand for the next test, on the site now occupied.

The Secretary was instructed to make enquiries respecting place and date for the next Midland Poultry Festival, and report at the next Council Meeting.

The Midland Federation is also preparing to launch another Prize Scheme in order to assist with their future work, both for education among its members and the equipment of the proposed new laying test plant.

During the past year much valuable work had been accomplished, and the Council were confident that with the loyal support of their members and others still greater things could be accomplished. For the year 1924-5 the turnover was something like £3,292 16s. 8d., which compares very favourably with other clubs and societies, and goes to prove the extent of the activities of the Midland Federation.

Recently the Midland Federation has been struggling to remove restrictions by Urban District Councils upon poultry-keepers for the suppression of poultry-keeping by tenants in various districts. These Councils have refused to allow tenants to erect poultry houses, but with the joint efforts of the Federation and the National Poultry Council they are pleased to announce that they have been successful in contesting their case with the authorities, and have received a letter from the Coseley Urban District Council, which reads as follows:—"Your letter of the 23rd of April last was read by my Council at its meeting on the 9th inst., and, upon the recommendation of the Housing Committee, it has decided to permit tenants, subject to prior sanction of the Housing Committee in every case to the individual proposals, to keep fowls at the premises occupied by them."

This is undoubtedly a step in the right direction, and the Federation will be pleased to assist any of their members in this or any other matter if they will only communicate with them.

Answers to Queries.

By the **EDITOR.**

DUCKS.

Rev. Seymour Shaw, Warcop Vicarage, Westmoreland, will answer all queries relating to Ducks. In cases of extreme urgency answer would be direct, otherwise they will appear in these columns.

POST-MORTEMS.

"BODIES" for post-mortem examination should be sent to **Major C. G. Saunders, D.S.O., B.V.Sc., M.R.C.V.S., Tarring Road, West Worthing.**

Bodies should be packed and sent by post immediately after death, marked for immediate delivery. The fee is 5s. for a reply by post. The name and address of the sender should be distinctly marked on the package. Advice of dispatch and fee should be sent under separate cover to Major Saunders.

Readers are particularly desired to observe the above rules when sending birds for post-mortem examination and also as to writing their name and address distinctly on the package.

REPLIES BY POST.

Replies by post (Not Post-Mortems) can only be sent to non-members of the S.P.B.A. on payment of a fee of 2s. 6d per letter. These are answered by the Editor, and relate to every phase of poultry-keeping except post-mortem examinations. Members of the S.P.B.A. are entitled to a reply by post by the Editor by virtue of their membership (**NOT from Major Saunders**).

All questions should be addressed to the Editor. Major Saunders does not reply to questions either by post or through these columns, except in relation to Post-Mortem Examinations.

Rickets (Wells) writes as to the inheritance of rooked breast bone, and possible causes. He is erturbed because he bought two expensive sittings f Rhode Island Red eggs in January to hatch ockerels for next season's matings, and several f the birds have developed crooked breast bones. hese may be caused by the birds perching on arrow perches before the cartilage is hardened. n that case, being an acquired character, the defect would not be transmitted. On the other hand, "soft bone" is often to be found in stock bred or heavy egg production, and the cartilage fails o harden owing to the inability of the bird to ssimilate a sufficiency of lime salts. In this case is inherited. Where it is an acquired character he birds may be safely mated, but if it is due to he latter cause the trouble is highly inheritable.

Costs (Ipswich) sends an excellent sample of eat and bone meal which he is able to buy at 5s. per cwt., and asks if he can use same instead the more costly fish meal without any fear of a rop in egg production; also a very good sample feed oatmeal, for which he is paying 14s. per wt., which he wants to use in place of Sussex round oats. He also wants to know if bran, iddlings, and other meals can be stored for any ngth of time without deteriorating. The latter estion I am often asked, only it generally takes e form of "how long." All meals deteriorate hen kept, no matter how carefully stored. It is not ssible to give a time limit, and may I suggest to hose who ask this question, that I have never ught meals to see how long they would keep. Even if well stored it is wise not to exceed a six weeks' supply, and great care should be taken that they do not become heated, as they often will if tightly packed and one sack is placed on top of the other. The meat and bone meal will effectively replace the fish meal. Any drop in the egg yield will be purely seasonal, and as this is bound to occur now, do not let it influence you in favour of the fish meal. The feed oatmeal, being a first-class sample, may well replace the more expensive S.G.O. It is frequently sold as such. It should, however, always be bought on sample as it varies very considerably in quality.

Scaly Foot (Breamore) asks the old question as to whether scaly leg is inherited, and as to how it can be cured. No, it is not inherited, is far more prevalent in dry sandy soils than in others, and is due to a parasite which begins its attack in the clefts in the toes and works its way upwards until the whole foot and shank becomes affected. Some birds appear immune to the parasite, but it is spread by contagion, and possibly crawls along the perches to the feet of healthy birds. It is easily cured. The legs should be well scrubbed with warm soapy water, and painted twice a week with a 2 or 3 per cent. solution of Izal, or well rubbed with equal parts paraffin and linseed oil. In some cases it has been cured quickly by the use of paraffin alone, but this is not to be recommended, neither is the practice of using tar.

A. L. (Lichfield) wishes to know if I can tell him of anyone breeding Silver Wyandottes for egg production, and whether they are good layers or not, and whether they have ever been entered in a laying competiton in this country. I do not know of any breeder in this country who breeds them for egg production. They are good layers, but of course do not compare with the Whites, as they have not been specially bred for this purpose. In the early days of the laying tests they won a four months' competition, four birds laying 223 eggs. In Australia they are more popular than the Whites, and have done exceedingly well in the laying tests there. Their eggs are about the same size as the Whites.

E. M. (Wigan) writes to say that he doubts the statement that there can be infection from egg to egg, and he refers particularly to the bacillus of B.W.D. I am afraid I cannot help his doubting. It was proved by Pernot some years ago that organisms do pass through the shells of eggs during the process of incubation, and this was confirmed by experiments carried out in this country in the early part of this year. It was also found that this occurred more readily in the incubator than under hens. Possibly this is due to the oily secretion from the hen's body which may fill the pores of the egg sufficiently to prevent the entrance of organisms. "E.M." does not give a reason for his doubts, and I hardly see his point in writing to me and asking for a reply in these columns, as I am confident he will not be convinced by the answer.

L. S. (Fareham) is very disappointed because over 60 per cent. of his Black Leghorns hatched this season have turned out to be cockerels, and he wants to know if I can tell him how to avoid such a catastrophe next season. I am sorry I cannot help him. All sorts of suggestions have been made which space will not allow me to discuss here. I can only say that not one of them in my experience will bear investigation, and the experience of "L.S." refutes the idea that the later hatches will always give a higher percentage of pullets, for his chicks were hatched the last week in April and the second week in May. He must wait until the scientists are able to tell us how we can control sex. It is impossible for me to tell him when that will be. In reply to his second question. As the chicks have free range, there can be no object in adding so expensive an ingredient as dried yeast to the mash.

New Reader (Kendall) has Wyandotte chicks, hatched March 15th, which are feathering badly, and seem to generally hang fire. He has been advised to give iron in the drinking water, and asks what I think of it. His feeding consists of: Bran 4 measures, clover meal 2, ground oats one, maize meal half part, and meat meal half part. This is given as a wet mash in the morning, and as a dry mash from 2 till 6, when they are given a grain feed of wheat and oats equal parts. He asks if it is too early for them to perch, a friend having told him they should not be allowed to perch until five months old or they will get crooked breasts. It seems probably that the chicks are hanging fire from two causes: One, the feeding is wrong altogether, and secondly, they are probably crowding at night. Under the circumstances the iron would do no good. He should put them on the following mash at once: Bran 1 lb., alfalfa meal 1, Sussex ground oats, 1½, biscuit meal half, meat and bone meal half pound. This should be given as the first feed (wet mash) in the morning. It can also be given dry from 10 till 6, merely replacing the biscuit meal with the same quantity of maize meal, and adding 4 per cent. linseed meal. It would be advisable to induce them to perch at once. There will be no danger of crooked breast bones if suitable perches are provided, and the chicks will develop more quickly.

G. R. B. (Accrington) has a wonderful lot of Wyandottes, but last year they began laying too early, and he wants, if possible, to check them this year. He also asks if it is wise to breed from pullets which laid early and are laying small eggs. His idea is to mate them to a cockerel from an exhibition strain. "G.R.B." should remember that in the first place this precocity is an inherited factor, and, moreover, is dominant to late maturity. To check pullets of this kind is very difficult, if not impossible, for in attempting to do so you often check bodily development. The following is a good mash for the purpose, and can be given until the pullets are five months old, when it should be changed to a laying mash:— 2 lbs. bran, 4 thirds, 1½ Sussex ground oats, half maize meal, half meat and bone meal. Grain, equal parts oats and wheat. It would not be advisable to mate to an exhibition cockerel, no greater mistake could be made than this, as you would be introducing other characters which would prove dominant to those desired. A far better plan would be to select as breeders pullets which have put up a good winter record, but did not start laying until they were at least 6½ months old.

K. R. (Bristol) asks if the S.P.B.A. Council has arrived at any decision respecting the registration of early-hatched pullets. He has some January Reds which are reddening up, and he would like to know if we can give him any guide as to what records they should make, if he wishes to breed from them next season, and, failing that, what records can he taken for the following year's breeding. I have no data which will help him with pullets at this season from the date of first egg, but would recommend him to select only those which give four eggs or more a week for the first six weeks of their laying. If he cannot do this, it would be better to wait until the spring, and take March and April for the records, selecting only those birds as breeders which give three dozen or more eggs during the eight weeks. For cockerel breeders, all other things being equal, those which give the highest records during these months would be best. These March and April figures are very reliable.

Curious (Dewsbury) has a White Leghorn hen which has its neck stretched out and cannot lift it from the ground, and he asks what causes this condition and how to treat it. He has rubbed with embrocation without avail. From his description I imagine this to be a case of Limberneck. It results from partial or complete loss of control of the muscles of the neck. It is believed to be caused by digestive disturbance, intestinal parasites, or the eating of putrid food. As to treatment, in this case I think "Curious" has left it too long. The embrocation would do no good, a dose of Epsom salts should have been given at once, and this may have effected a cure had the cause been due to eating putrid food, but would have been useless if it was induced by intestinal parasites. The sample of mash he sends, although of good quality, is a price no one can afford to pay if he wishes to keep fowls for profit. It is at least 8s. per cwt. too dear. It would not pay him to keep his Leghorn pullets for another year for egg production, they seem to be a very moderate lot judging by the average number of eggs produced per bird.

POST-MORTEMS.

W. J. The post-mortem examination of the duckling showed that the coverings of the brain and spinal cord, and the brain and cord themselves, were in a highly congested condition. Excessive exposure to the sun's rays could produce these condition—i.e., sunstroke—but I think that it would be safer to regard it as a definite infectious trouble. The skull of this bird was dented in, and was pressing on the brain, but I was unable to determine whether this had occurred before or after death, as there was no fracture or laceration. I should advise isolating this lot, and giving them each five grains of sodium Hypo-sulphite twice daily in their mash, as favourable reports have been received about this as a preventive. Whether this acts on the germs in the system or in the food is not known, so its employment is entirely empirical, more especially as the causative organisms has not yet been determined, but in practice it has given good results, so is worth a trial.

A. C. B. The trouble with the two chickens submitted for post-mortem examination was Roup of the ocular variety. In this disease the only constant factor is the original infection by the ultra-visible and ultra-microscopic virus, the other manifestations, such as catarrh of the eyes, respiratory passages, diphtheritic lesions of the mouth, throat, and larynx, and the skin eruption, popularly known as chicken-pox, being only due to the secondary invasion by various bacteria. In many outbreaks, most of the trouble is caused by these secondary invaders, which may persist long after the exciting cause has lost its virulence. As the type of the disease may change at any time, periodical inspections of the mouths and throats should be made in order that the lesions may be treated before they become too extensive; diphtheritic patches should be scraped off, and the raw surfaces painted with tincture of iodine. In all types of the disease give one dram of copper sulphate in each gallon of the drinking water, and in the ocular and catarrhal forms dip the heads, with the mouths held open, under a similar solution, keeping them under for twenty seconds. This should be done daily, and in cases where there is much mucous a previous dipping in a salt solution (one teaspoonful to a quart of water) will help to remove this, and allow the copper solution to come in better contact with the diseased tissues. Disinfection of the premises and equipment is most essential, and should be most thoroughly done. Litter should be constantly renewed, and particular attention paid to the floors, perches, nest boxes, food and water utensils. Care is needed to prevent carrying infection by the hands or boots, and apparently recovered birds should be quarantined for three weeks. To cope with an outbreak like this entails an endless amount of labour, and the most painstaking care, but half measures only lead to disappointment and are waste of time and energy.

(Continued at Foot of Next Column).

Correspondence.

LIME WATER.

To the Editor of "Eggs."

Sir,—Will you allow me a little space for a further reference to the application of lime water to chicks, and to correct a misapprehension due to my statements being badly expressed?

Both "Anglo-Indian" and Mr. Prideaux seem to be under the impression that I deliberately tried to create bowel trouble by bad incubation. This is not so. My bad incubation was the final of a series of experiments, deliberate and premeditative, to get at the root of the cause of "dead-in-shell," and uncertainty in hatching in my own work, and, incidentally, with some measure of success, inasmuch as I have reduced the losses from that cause from 25 per cent. and 30 per cent. to 4 per cent., but that is another story.

The bowel trouble as described may, or may not, have been peculiar to that particular incubation, but, as I said in my letter, I have always had bowel trouble of a sort, though of a mild order, with some of my chicks, previous to the use of lime water and now there is never a trace. This evidence is provided by 560 chicks this season, and I considered it a sufficient number to preclude coincidences.

You, Sir, are strong in your advocacy of milk as a food, and we all appear to agree with you. If, then, milk be the cause of the trouble, surely it is well to be able to correct in a simple manner?

Both Mr. Prideaux and "Anglo-Indian" seem to suggest that excessive heat may be a cause of bowel trouble. If this is so, are we within measurable distance of discovering that the wilting of chicks, popularly supposed to be due to leg weakness, is really due to this cause? I mention this because the recent spell of hot weather has shown me that, in spite of every precaution—including a white sheet over the brooder and run—the chicks show a decided tendency to be "wobbly." Nothing serious, but the tendency is there and it is noticeable that they recover their vitality after sundown.

"Anglo-Indian" asks my reasons for giving lime-water. They were:—

(1) To secure the same condition of droppings as one sees in the case of wild birds, i.e., hard, firm, and with indications of the presence of lime.

(In securing this one notices marked diminution of offensive odours.)

(2) To correct a possible acidity due to milk.

(3) I cannot digest milk myself without there is included in it a little bicarbonate of soda. I therefore allowed my imagination a little free play.

I cordially agree with "Anglo-Indian" that the matter is worth research by those qualified to investigate, because, to summarise, I have secured the following benefits in my own practice:—

(1) Freedom from bowel trouble of any and all description.

(2) The desirable condition of the droppings sought for.

(3) Marked increase of vitality in the chicks.

(4) The advantage of being able to put the chicks on dry mash four days after hatching instead of seven.

(5) In the case of White Leghorns the separation of the cockerels at 17 days after hatching instead of 28.

The fact may be of interest as a confirmation that a neighbour who runs a rather fine aviary of foreign wild birds had a case of diarrhoea, and the application of lime water on my suggestion cured the trouble in twelve hours.

Both "Anglo-Indian" and Mr. E. J. Prideaux' communications on the subject are very welcome and instructive to me personally.

Yours faithfully,

C. WINTHROPE SOMERVILLE.

Mr. Somerville should remember that we have always advised skim or buttermilk, and have frequently pointed out that full milk will cause digestive trouble.—(Editor.)

COMMUNITY POULTRY FARMING.

To the Editor of "Eggs."

Dear Sir,—My challenge to Mr. Morton Nance was to state the cost of egg production, instead of which he gives an imaginary balance sheet based on deceptive estimates. His profits are gross profits, and he makes nearly all his income to be profit.

Does he expect to get 2s. 6d. per dozen for eggs he has got in cold store in June and July? He won't get it, for the price of new laid eggs will not reach to this price wholesale until the end of August or early September. Does he means to sell these as new laid eggs? He is also going to sell table birds plucked and drawn, and estimates to get 4s. each for them and realise a profit of £30 when he has not reckoned anything for their cost. He has not included cost of rearing chicks, and he only gives the best part of the year. The labour would cost, at 2s. per bird, £44 for 440 hens; he would need to replace with young stock, say, half 220 at 1s. each, £11—total balance, £55. For a holding, value £1,400, the rent and rates would be about £100, but the house, garden, lawns, etc., should not be charged to the poultry account, so that I expect £25 to £30 would be nearer the mark. Depreciation would be about outset with the manurial residue of food used. He does not appear to know what capital he has got in the business; there is a wide margin between £300 and £500. He states the S.P.B.A. scheme is a community scheme. It is neither community nor a co-operative scheme in my opinion. But is ONE MAN REPRESENTING THE S.P.B.A. WITH EXPERT KNOWLEDGE OF THE CORN TRADE, BUYING FOODSTUFFS FOR INDIVIDUAL MEMBERS OF THE S.P.B.A., WHO HAVE NOT GOT THIS KNOWLEDGE OR ARE NOT ABLE TO USE IT TO THE BEST ADVANTAGE.

After I knew for certain what it cost me to produce eggs (see page 337) I refused to sell any eggs (except small or cracked ones) at less than 1s. 4d. per doz. wholesale, although many shopkeepers were selling at 1s. 3d. and 1s. 4d. retail. I told my customers I was not going to sell at a loss, and I was not competing with those that sold at a loss, neither was I going to lose on the roundabouts what I had made on the swings. So far I have been able to sell every egg, though I had made provision to preserve a good lot. My customers stuck to me splendidly—all except a co-operative stores, who only wanted to buy from me if I happened to be selling cheaper than eggs sold in the market. I am not keen on preserving eggs. It interferes with the sale of new laid eggs. I have, however, sold a lot for preserving in five to 60 dozen lots, which has kept me clear of surplus eggs. When people have got eggs by them they will use more than when buying from hand to mouth, and if all of us refused to sell below 2d. each it would let the foreigner in, and we could then eat both the new laid eggs and the preserved eggs ourselves, because we should be unable to sell them. Often preserved eggs sell after Christmas at 1s. 6d. and 1s. 8d. per dozen, and this brings the price of new laid down with a rush.

The cost of chilling and porterage of 96 dozen eggs is 3¾d. per dozen, which sum must be added to cost of production. I note Mr. Morton Nance pays 20s. in the £ for his foodstuff, and sells his eggs at 18s. 4d. in the £. Here is where I score. I get 20s. in the £ for all I sell, and pay less than 19s. in the £ for some of the foodstuffs I buy. It costs him 2¼d. per week to feed his fowls. It costs me less than 2d. per week to feed mine.

If he would get his food from the S.P.B.A. he would save on his present cost £15 to £20 a year or more.

Yours truly,

W. HALL.

P.S.—The difference between gross profit and nett profit in our accounts for full year is £242 8s. 10d. Capital in the poultry business at end of the year £505 9s. 4d.

A Study of the Relative Values of certain Succulent Feeds and Alfalfa Meal as Sources of Vitamin "A" for Poultry.

By **D. E. DAVIS** and **J. R. BEACH.**
(University of California).

The occurrence of a nutritional disease of poultry resembling roup was reported, in 1919, by Haring, Beach, and Jaffa. Beach, in 1924, reported further studies of this disease, in which he showed that it is caused by a deficiency of vitamin "A" in the ration. Green food is the chief source of vitamin "A" in poultry rations in California, and a shortage of this food-stuff is the most common cause of the occurrence of this deficiency disease here. Although green feed can be grown throughout the year in most of the poultry-raising districts of the state, poultrymen are frequently confronted with a shortage of this feed on account of lack of irrigation facilities, limited acreage, or cold weather. Another common cause of a shortage of green food is the failure on the part of some poultrymen to make provision for an emergency supply when the usual supply, as a result of climatic or other conditions, fails. When conditions, therefore, are such that the growing of sufficient green food is rendered difficult, it is important to know the comparative value of different varieties of green feeds as sources of vitamin "A" for poultry. The same is true regarding such products as artificially sprouted grains, alfalfa meal, and root crops, such as carrots and mangel beets, which might be utilised as an emergency substitute for greens during periods of shortage. It was with these points in view that the investigation herein reported was undertaken.

PLAN OF EXPERIMENT.

The general plan of the experiment was to feed fowls a basal ration which previous experiments had shown to be deficient in vitamin "A," and to supplement this with different varieties of green food commonly used, alfalfa meal, carrots, or mangel beet. The basal ration was a dry mash mixture, which was constantly before the birds in hoppers, and which consisted of:—

Bran	25	per cent.
Shorts	25	,, ,,
Ground Barley	25	,, ,,
Soya Bean Meal	10	,, ,,
Meat Scrap	15	,, ,,

and a scratch grain mixture which was fed twice daily in the litter, and which consisted of:—

Wheat	33⅓	per cent.
Recleaned Barley	33⅓	,, ,,
Egyptian White Corn ...	33⅓	,, ,,

Grit and oyster shell were available at all times. The birds were confined in houses which had tight board floors covered with shavings for litter.

The supplements used were field-grown green barley cut when six to ten inches high; red clover cut when two to four inches high; the large leaves of Jersey kale, leaves and tender stems of green alfalfa, blue grass lawn clippings, the entire plant (root, grain and stalk) of artificially sprouted barley grown indoors to the height of three or four inches, common market varieties of carrots, mangel beets, and alfalfa meal of good colour, which contained 17.2 per cent. protein and 25.4 per cent. fibre.

A weighed amount of a supplement was fed individually to each bird daily except Sunday. Feeding was accomplished in a specially-constructed coop provided with removal partitions, which divided it into six small compartments for individual birds. The grilled sides of the cage permitted the bird to eat food placed in a cup suspended on the outside. Birds which did not voluntarily consume all of their daily supply were forcibly fed the remainder.

It was desired to employ at the start of the experiment less than the minimum requirements of each supplement. Since no definite data on this point were available, the minimum daily supply was arbitrarily fixed at one gram for each bird. The daily amount of any supplement was doubled for all birds in a group when any bird in that group exhibited definite indications of suffering from vitamin "A" deficiency. When additional birds became affected after an increase in the supplement the daily amount was again doubled. The appearance of either the characteristic ophthalmia, or pustules, in the mouth or esophagus, described by Beach, was regarded as a definite indication of vitamin "A" deficiency.

White Leghorn pullets three months old were used. They were divided into ten groups of six birds each, and placed in five pens of two groups each. Table I. gives the ration for each group.

The birds were procured and divided into the various groups on December 10, 1923, but since it was thought desirable to allow them to accustom themselves to the basal ration and the new environment the actual experimental feeding was not started until January 14, 1924.

The feed consisted of the basal ration, with the addition to the grain mixture of 25 per cent. of yellow corn, which, it was thought, would supply sufficient vitamin "A" during the preparatory period.

On December 26, bird 229 (group 7) died. Post-mortem examination showed a heavy infestation of intestinal round worms (A.galli), a few pustules in the esophagus, and a slight ophthalmia. On December 27 each bird was examined, and one (217, group 5) was found with marked lesions due to vitamin "A" deficiency. This bird died on the following day, and was found to be also heavily infested with intestinal worms.

Table I.

Pen No.	Group No.	Bird No.	Ration.
I.	1.	201-206	Basal ration plus field grown barley.
	2.	207-212	Basal ration plus red clover.
II.	3.	237-242	Basal ration plus kale.
	4.	243-248	Basal ration plus green alfalfa.
III.	5.	213-218	Basal ration plus blue grass lawn clippings.
	6.	219-224	Basal ration plus sprouted barley.
IV.	7.	225-230	Basal ration plus carrots.
	8.	231-236	Basal ration plus mangel beets.
V.	9.	249-254	Basal ration plus alfalfa meal.
	10.	255-260	Basal ration only (control).

The ration was then changed by substitution of corn meal for the ground barley in the mash mixture and of yellow corn for the grain mixture. Three per cent. tobacco dust was added to the mash mixture to control the intestinal round worms. Greens were liberally fed to all birds for a period of six days. Ophthalmia was observed in one other bird on December 29. Local treatment of the lesions, and the administration of a 5 cc. dose of cod liver oil twice daily for five days resulted in complete recovery. As the condition of the flock rapidly improved, feeding of the basal ration was resumed, and the feeding (one gram to each bird daily) of supplements was begun, on January 14, 1924. The loss of two birds reduced the number in groups V and VII. from six to five.

On January 18, weekly weighing of each bird, and on 1st February daily (except Sunday), examination of each bird, for indications of the effect of vitamin "A" deficiency was begun.

On March 3 chicken pox appeared, and affected a few birds. All fowls were vaccinated on March 7 and 14, respectively. This disease was controlled with the loss of but one bird (206, group 1), which died after vaccination.

The average daily food consumption per bird over the period of 102 days was 22 grams of mash and 44 grams of grain, a total of 66 grams. On this basis the proportion of the daily amounts of supplements fed to the total food consumption was as follows:—

1 gram daily of supplement: 1.5 per cent. of the total ration.
2 grams daily of supplement: 2.9 per cent. of the total ration.
4 grams daily of supplement: 5.7 per cent. of the total ration.
8 grams daily of supplement: 10.8 per cent. of the total ration.
16 grams daily of supplement: 19.5 per cent. of the total ration.
32 grams daily of supplement: 32.6 per cent. of the total ration.

(*To be Continued*).

"LEICESTER MERCURY" COUNTY LAYING TRIALS.

Officially supervised by the Leicestershire County Council.—Agricultural Education (Joint) Committee, Horticultural Sub-Committee.

Ninth Monthly Report for the period May 18th—June 14th, 1925.

In the report for the ninth month Mr. W. Rolling states that the period has been characterised by a considerable drop in the production of eggs, the total for the four weeks being 1,871, as against 2,051 for the previous month. The total for the thirty-six weeks is now 16,716 eggs, 83 per cent. of which were first-grade. The average per pullet for the month is 16.7, as against 18.3 for the previous month. The very warm weather has both directly and indirectly been responsible for the decline, as the birds have been visibly affected by the heat, and 24 birds have passed through the broody coops. There is practically little change in the positions of the competing pens. Mr. F. Wildman's pen of R.I. Reds has further increased its lead over all breeds with 1,118 eggs, value £9 15s. 0½d. Messrs. Crawford and Dowell's pen of R.I. Reds has risen from fifth to third place. The best performance for the month has been made by Mrs. R. Crawford's pen of White Leghorns, which laid 122 eggs value 15s. 6½d. The health of all birds remains good, and no case of disease has occurred.

Following is the Total Eggs:—

Section 1. Division A. Light Breeds (Six Birds).—Mrs. R. C. Crawford (W.L.), 991 eggs; Crawford and Dowell (W.L.), 876; J. and A. Moore (B.L.), 742; Alan Kemp (B.L.), 724.

Section 1. Division B. Heavy Breeds (Six Birds).—T. F. Wildman (R.I.R.), 1118; Mrs. E. Ball (R.I.R.), 1012; Crawford and Dowell (R.I.R.), 1025; Lady Dorothy Fraser (R.I.R.), 996; Miss G Belgrove (R.I.R.), 956; C. B. Payne (R.I.R.), 965.

Section 2. Any Breed (Two Birds).—J. T. Kidger (W.W.), 383; Geo. Gillver (W.W.), 331; Geo. Stevens (An.), 339; Miss D. Walton (W.L.), 290; Mrs. Gilliver (R.I.R.), 219.

H. T ATKINSON, County Poultry Instructor.

The use of Poultry against Farm Pests.

By **A. ROEBUCK**

(Adviser in Entomology, Midland Agricultural College).

Slugs and Snails are two closely-related groups of animals. They have much the same effects on plants, many species being very destructive to soft tissues. With a rasping "tongue" they eat off soft green parts of plants, leaving usually strands of veins. This shredded appearance and the iridescent slime so frequently left on plants or the soil are special signs by which the pest causing the damage may be definitely decided. They are not all vegetable feeders; many species are purely animal feeders, and others, while preferring vegetable matter, often supplement this with animal food and dead organic matter.

Slugs are distributed everywhere, whereas snails are more particularly abundant in the limestone and chalk districts. Both slugs and snails crawl upon a soft "foot," and so move best on moist surfaces. Hence they are lovers of moisture, and probably for this reason are largely nocturnal in habits. They rest during the day underground, or in damp crevices, and come abroad to feed at night. In wet, dull weather, especially during the winter months, they are tempted out to feed during the day.

During 1923 the writer periodically fed slugs to fowls with somewhat disappointing results. The reason being that only large specimens were fed. Some encouragement was obtained by finding that eggs were eaten.

In 1924 specimens of different species were fed and also of different sizes. This practice has been since followed, and as far as possible even in the young stages, the species were kept separate. This is difficult, as the species are very variable, and the young stages especially difficult to determine. The results of tests on the chief species are given below. The list includes all the chief farm and garden pests.

Mr. R. Burt Shaw, the Poultry Lecturer, kindly allowed the use of different breeds for the test:—Rhode Island Red, White Wyandotte, Light Sussex, White Leghorn.

Common Black Slug. Arion Empiricorum (Ferussac) or A. ater (Linne). This is the Black Slug extremely common in gardens, but found everywhere. Adults may reach a length of five inches. The body is coarsely ridged and furrowed. Although the type colour is black there are many coloured varieties. When irritated it contracts into a hemispherical lump. It seems to prefer decaying vegetable matter as food, but, nevertheless, is responsible for serious damage in gardens, and at times even in fields. It will also eat dead worms, and various animal matter, and, like many other species of slugs, is not averse to eating other members of its own kind.

During the past three seasons repeated trials have shown that specimens of two inches in length and over are not liked by fowls, and, therefore, are refused. Young specimens, under half an inch in length, are eaten. The eggs are readily eaten by young chicks and adults.

Garden Slug. Arion Hostensis (Ferussac). A smaller and lighter coloured species than the last, is grey with darker side bands, and the foot-sole, or part in contact with the ground when walking, is yellow. It specially frequents gardens, but is also found in fields, and is well distributed throughout the country. When full grown it may reach a length of 1½ inches. Several dozen specimens, between 1/3rd inch and ¾ inch in length, have been fed to fowls, and in all cases they were readily eaten.

A few specimens of Arion Circumscriptus (Johnston), very similar to the above, but with a white foot sole, were obtained in Lincolnshire, and fed successfully to fowls.

Amalia Sowerbyi (Ferussac). This is a somewhat local species, with a very pronounced keel along the back. It is of a warm brown colour with a lighter yellowish foot sole. The slime produced is sticky, hence the slug is very sticky to the touch. Some half-dozen specimens of this species were obtained in Leicestershire during April, 1925, the lengths being between 1 and 1½ inches. All were readily eaten by White Leghorns, although they seemed to experience some difficulty in swallowing them. The slug will reach 2½ inches in length.

Large Striped or Spotted Slug. Limax Maximus (Linne) To slug enthusiasts this is really a fine and handsome species. Typical specimens are yellowish grey spotted and striped with black, but there are many very marked colour varieties. Full-grown specimens reach six inches in length. It is widely distributed and common, but prefers the shelter of walls, sheds, cellars, etc., to the open country. In greenhouses one such slug can cause havoc, especially among choice seedlings. It feeds on almost everything—greenstuffs, fungi, bread, meat, etc., and attacks other slugs.

As in other species tested, the eggs are readily eaten by fowls, and the very young slugs, but older species are more rarely eaten, and those over three inches long were always refused.

Field, Dew or Milky Slug. Agriolimax Agrestis (Linne) This is the commonest and most destructive of the species. It is found everywhere, both in gardens and fields. It is a small species which reaches at most 1½ inches in length. The ground colour is whitish or pale fawn, spotted or netted all over with brown or black. The general colour effect is grey or fawn, and this is emphasised by the fact that they produce large quantities of a milky slime, which covers them completely Whereas their usual diet is living vegetable matter, they will eat manure and dead or living insects, worms and slugs.

Of all slugs this is by far the chief pest, and it is one most readily eaten by fowls. Other species are more restricted as regular pests to gardens coming to fields less frequently, but this is very destructive, both in garden and fields. Many crops of winter cereals come up well in the autumn, but during the succeeding months are completely destroyed by young slugs. If the weather be mild they come above ground, and shred the young leaves, reducing them to strings of leaf veins. If the weather be more severe they remain below ground, and sever the stems just above the roots. If very severe weather prevails they feed scarcely at all, and many are killed. In hard winters eggs fail to hatch until Spring.

During the last three seasons eggs, young and adults of this species, have been frequently fed to hens, and in all cases they have been eaten. On occasions the adults were picked up and dropped a few times, but always finally eaten.

(To be Continued).

(Continued at Foot of Next Column).

The Sphere of the National Poultry Council

By **EDWARD BROWN, F.L.S., General Secretary.**

The following address was delivered by Mr. Edward Brown at the Poultry Club Conference at Wembley:—

The subject which has been committed to me in the day's proceedings needs no emendation by those who have shared in the National Poultry Council during the last five years. To that extent the first part of my talk is comparatively easy. To others let it be said that the time of construction has been onerous in the extreme, made more difficult by supineness, indifference, even antagonism, on the part of the majority of those who have benefited most. Many engaged in one or other branch of the Poultry Industry regarded, at the outset, the attainment of unity as an impossible dream. These remind us that "The man who says a thing cannot be done is generally interrupted by somebody doing it." A large measure of unity has been achieved, the fruits of which are evident on every side.

The sphere of the National Poultry Council is indicated by many achievements during its brief yet pregnant history. A full record of these would take more time than is at my disposal. A few leading points, therefore, must suffice, indicative of a greater whole. Progress depends upon knowledge and experience, followed by dissemination in the widest fields, even though what Mr. Walter H. Page described as "The bravery of ignorance" may lead to advancement. That, however, is often due to a vision denied to others, to the creative force of thought. Therefore, a primary object of the National Poultry Council has been education based upon research, upon tested knowledge and experience, in which respect science and practice are but parts of the whole. Only in that manner can we counteract complexity alike in breeding and production, which, as Mr. Havelock Ellis has pointed out, breaks down the automatically balancing influence of natural selection. After years of unrealised hopes and many disappointments, we are within sight of realising a long cherished ideal in the National Poultry Institute, which will be the place where the findings of science can be put into practice. The grant from the Government of £50,000 would never have been obtained had there been no National Poultry Council, nor would have the more than £6,000 contributed by poultry breeders and producers in order to secure the sum named from public funds. And, be it noted, poultry-keepers, through the National Poultry Council, nominate a majority of representatives upon the committee entrusted with supervision of the scheme. Where there are those who fail to realise all this means to poultrymen and women, let it be said that their children will have a clearer vision. They will ask: "What did you do?" to which in all too many instances there can be no response. Man is made to grow, not stop, and there should be no stay in progress. We require at least £500 to complete the Institute Scheme. Let those who have not contributed, or done so inadequately, take the opportunity whilst it is available of making amends by subscribing without delay that amount.

The National Poultry Institute must be the interpreter to poultry-keepers generally of newer knowledge. It, however, can only directly reach a few. The great mass must be benefited either through the Press or County Instructors. So that the equipment of these last-named may be raised, and succeeding generations have the advantage of systematic training, the National Poultry Council instituted the National Poultry Diploma Examination Board, which, during the past four years, has exerted a notable influence and raised the teaching of this subject on to a higher plane than ever before. In that respect let me give a quotation from an unknown source, namely, that "Theory without practice is a poor thing, but, in the changing conditions of the modern world, practice without theory is not very much better." The practician may be, often is, a one-armed man.

These two great fields of effort are concerned with the future much more than the present. The National Poultry Council has, however, dealt with immediate problems of pressing importance, and which could not have been met without united action. That is its main sphere. It has commanded the respectful attention of Parliament, Government Departments, County and Local Authorities, Railway Companies, Fox Hunters, and the public generally. By its constant activities it has forced Local Authorities to conform to the law and prevented repression of poultry-keeping in many areas where this was attempted, often illegally, whilst as a result of supporting these authorities in protecting public health there is apparently a great improvement in the methods adopted by backyarders and others.

It has fought and is still fighting a strenuous battle with the Inland Revenue and Public Authorities, who have endeavoured to deny to those engaged in Poultry Husbandry, whether exhibitors or producers—all of whom are primarily contributing to the National food supply, and therefore one in ultimate aim—the concessions granted by Parliament to agriculture. Poultry farmers are subject to the same regulations as are farmers. Therefore, they have a right to be taxed and rated on the same basis, no more, no less. The Authorities cannot have it both ways. This persecution—and no other term may be applied—can alone be stopped by unity on the part of all who are, or may be, subjected to the same claims. Our weakness is that the majority are content to let a small minority bear the burden. "Man is not the helpless victim of circumstances unless he admits it." The National Poultry Council was formed at the psychological moment. What it has accomplished is phenomenal. Were the Poultry Industry effectively and fully organised and supported by all engaged in it nothing could withstand its influence.

Such to a limited extent indicates what has been recognised as the sphere of the National Poultry Council. There is now a consciousness of unity which needs to be extended a thousandfold. Before its formation I offended many—perhaps some who are present to-day— by describing poultry-keepers as a disorganised mob. The statement could not, however, be controverted. The different sections had no cohesion, no centre of gravity. They each reminded one of "the cock who imagined he should crow so that he migh wake the dawn." Now there is a partial measure o organised effort, as yet incomplete. At the same tim the influence upon the public mind has been profound and it is realised that the Poultry Industry is an important factor in the national life. Constructive policies have been adopted. There is recognition of body which voices the views and objects of all sections The National Poultry Council has not been and is no another society with limited though important aims It is a combination of all for common purposes. Further, it is independent of parties, political or otherwise does not depend upon government support, is unfettered by monetary influences or interests, an recognises no cliques. It is essentially democratic i its constitution, and is what those supporting determine. Northern and Southern, Eastern an Western are on an equality, have an equal voice in it control, if they exercise it. Those who happen to b most prominent in it are nominees of affiliated societie and have earned the position by service.

(To be Continued.)

POST-MORTEMS—Continued.

N. B. M. The pullet had received a severe co tusion and small wound in the region of the uppe thigh, resulting in great effusion of serum and th entrance of air to the subcutaneous tissue (emphysema). An egg in the lower portion of th uterus, and ready for laying, was also broke showing that the bird had suffered considerab violence.

D. D. A shell-less egg in the uterus had cause inflammation of that organ, involving also t peritoneum. The ovary was in full activity, a I should advise a reduction of such stimulati foods as maize and animal meals until the orga have had time to readjust themselves, also provision of limestone grit or crushed oyster she

B. O. The post-mortem examination of t Runner duck showed that the trouble was eg binding, followed by inflammation of the uterus a peritonitis. A twist of the uterus had occurre rendering the passage of the egg an impossibilit

THE SCIENTIFIC POULTRY BREEDERS' ASSOCIATION.

APPLICANTS FOR MEMBERSHIP.

Bradford, Geo., Laverock Lea P.F., Lesmahagow, Lanarkshire.
Cannan, D. (M.D.), The Chantry, Fladbury, Worcestershire.
Kidman, C. H., Milton Hill, Clapham, near Bedford.
Cooke, Thos. W., Aldborough, Norwich.
Stafford, G. J., 308, Bolton Rd., Kearsley, near Bolton.
Davies, Mrs. M., Gt. Canfield Park, Takeley, Essex.
Salter, D. R., Froxley Utility P.F., Shawbury, Salop.
Barr, A. Gilmour-, Branscroft, Auchinairn, Bishopsbriggs, Glasgow.
Young, H. C., Hillside, Smeet, near Ashford, Kent.
Campbell, A., Crown Mineral Water Works, Alexandria, Scot.
Thomas, J. V., "The Dell," Storeton Rd., Prenton, Birkenhead.
Bell, Mrs. H., Edenfells, Hillsboro', Co. Down, Ulster.
Healey, T. A., Clough House, Oakamoor, N. Staffs.
Hallows, A., 7, George St., Clitheroe, Lancs.

MR. TOM NEWMAN'S MARRIAGE.

Members of the S.P.B.A. and readers of "Eggs" will join in hearty congratulations to our esteemed Secretary and Editor on his marriage to Miss Lily Murphy, Poultry Expert to the Ministry of Agriculture, Northern Ireland. The ceremony took place at the Church of the Holy Cross, Ardoyne, Belfast, at 7.45 a.m. on June 17th.

The wedding was quiet in the extreme. Dr. Paul Murphy (brother) gave away the bride, and Mr. John Meekings acted for the bridegroom. A few intimate friends of the bride were the only other guests. The wedding breakfast was partaken at the Midland Hotel, prior to the departure of Mr. and Mrs. Tom Newman to the Highlands of Scotland for the honeymoon.

Our sincere and affectionate wishes are offered to them both, for future happiness and prosperity.

PRESENTATION TO MR. TOM NEWMAN.

Mrs. Hunter much regrets to announce that she is very disappointed with the number of those who have responded to her appeal, which she sent out to each member of the S.P.B.A. at the end of May last. Barely one quarter of the membership has subscribed, and therefore the fund will be kept open until July 8th next, on which date the presentation, in the form of a piece of plate and a cheque, will be made to Mr. Newman at a Council Meeting. This will give those who have not subscribed the opportunity of showing the great respect and admiration which we all have for our able Secretary.

Cheques and postal orders should be sent to

MRS. HUNTER,
Ringfield, Knockholt, Kent.

YORKSHIRE FEDERATION INTERNATIONAL LAYING TEST, HELD AT OTLEY.

First ten positions at end of eighth month, May 2nd to May 30th, 1925, for specials offered to members of the Keighley and District Branch of S.P.B.A., namely:—The "S.P.B.A." Challenge Cup, for pullet with record of highest cash value at end of Test, in Class C. The "Mrs. Wilson" Challenge Cup, for pullet with record of highest cash value in opposite section to winner of the S.P.B.A. Cup. Black Leghorn Cockerel, value £2 2s., from Mr. Frank Snowden, for Black Leghorn pullet with record of highest cash value. Silver Spoon, from Mr. S. Lawton, for White Leghorn with record of highest cash value. Silver Spoon, from Mr. H. Dixon, for White Wyandotte, with record of highest cash value Silver Spoon from Capt. W. Owen, for R.I. Red, with record of highest cash value.

Section 9. A.V. Light Breeds.—W. Wharton, Keighley (W.L.), eggs laid 161; J. and W. Brayshaw, Cross Roads, Keighley (W.L.), 146; S. Preston, Haworth (W.L.), 130; Wright and Fortune, Keighley (Ex-L.), 144; H. Kershaw, Keighley (W.L.), 127; S. Hartley, Haworth (W.L.), 141; B. Atkinson Thornton, Bradford (Bf.L.), 140; J. Paget, Utley, Keighley (W.L.), 125; W. Thompson, Glen Lea, Keighley (Blk. L.), 135; F. Waddington, E. Morton, Keighley (W.L.), 127.

Section 10. A.V. Heavy Breeds.—Alf. Sawyer, Cross Hills, Keighley (R.I.R.), eggs laid 148; Mrs. Hawkesworth, Pool (W.W.), 154; H. Downsbrough, Bradshaw, Halifax (W.W.), 167. J. Brown, Glusburn, Keighley (R.I.R.), 144; H. Downsbrough (W.W.), 141; Wright and Fortune (W.W.), 120; Miss Taylor, Cullingworth, Bradford (W.W.) 141; C. Macaulay, Keighley (R.I.R.), 133; Tom Marks, Oak Hill, Somerset (L.S.), 139; J. and W. Brayshaw (W.W.), 121.

MIDLAND FEDERATION NEWS.

Hearty congratulations from all informed quarters have recently been tended to Miss Florence Shuker, the general secretary and book-keeper of the Midland Federation of Feather and Fur Societies, who has recently passed the Royal Societies of Arts examination in book-keeping with first-class honours.

The Midland Federation are fortunate to be equipped with such officers on their staff.

It is interesting to note that during her term of office, Miss Shuker has been responsible for the whole of the figures and accounts in connection with the Midland Federation, which probably sets up a record of any similar poultry organisation in the country for money turnover each year.

Last year the total figure of cash transacted amounted to £3,292 16s. 8½d., which is largely in excess of what is usual for poultry organisations.

In commenting on the extensive character of the Midland Federation at last Friday's Council Meeting, the Chairman, Mr. Maurice H. Brady, remarked that such figures were as large as many business organisations.

LAINDON LAYING TEST.

MAY.

Section 1. Light Breeds (Five Pullets).—1, F. Freeborn (W.L.), 668 eggs; 2, H. J. Thomson (W.L.), 639; 3, T. Miller (W.L.), 596. Monthly Certificate, H. J. Thomson.

Section 2. Heavy Breeds (Five Pullets).—1, E. V. Bazin (R.I.R.), 616; 2, H. J. Thomson (R.I.R.), 587; 3, W. Belsham (R.I.R.), 546. Monthly Certificate, H. E. Bragg.

Section 3. Light Breeds (Single Birds).—1, East Anglian P.F. (W.L.), 161; 2. W. Dilleng (W.L.), 157; 3, Miss N. Grubbe (W.L.), 155. Monthly Certificate, H. Bush.

Section 4. Heavy Breeds (Single Birds).—1, H. Jones (R.I.R.), 161; 2. C. Sheridan (W.W.), 145; 3, High Bush (W.W.), 156. Monthly Certificate, H. Bush.

Section 5. Gift (Any Breed).—1, W. Dilleng (W.L.), 157; 2, V. Bazin (W.L.), 139; 3, H. Maycock (W.W.), 119. Monthly Certificate, W. Dilleng.

First-Class Certificate for Highest Individual Score for Month: H. Bush. 29 eggs.

Market Report.

MINISTRY OF AGRICULTURE RETURNS, WEEK ENDING FRIDAY, JUNE 19th, 1925.

GRAIN AND FEEDING STUFFS.—British wheat is in slow demand, and with fair supplies on offer is again cheaper, the average quotation being 12s. 9d. per cwt., as compared with 13s. 1d. last week. Imported also meets a quiet trade at easier prices, Argentine having declined 8d. per cwt. at all markets, while No. 1 Manitoba is reduced 1s. per cwt. at Bristol and Hull. British feeding barley is unchanged in price, and imported descriptions generally show little alteration, except at Bristol, where prices are lower owing to a dull inquiry. Home-grown oats generally realise recent values, but at Hull white descriptions have declined from 10s. 6d. to 10s. 1d. per cwt. on the week. Foreign oats are in fair request at about late rates. With the arrival of new crop Argentine maize, prices have declined, the average quotation being 10s. 7d. per cwt., as against 10s. 11d. a week earlier.

Offals generally meet a quiet trade, and bran is cheaper at London and Liverpool, but at Bristol, where a better demand is reported, prices have advanced 12s. 6d. per ton on the week. Meals are in little request, and maize meal, in sympathy with the lower maize prices now ruling, is cheaper at most markets. Oilcakes are a dull trade at about recent quotations.

MILLERS' OFFALS.—Bran (British): Bristol, £7 17s; Hull, £6 12s; Liverpool, £6 15s; London, £6 10s. Broad Bran: Bristol, £9 17s; Hull, £7 12s London, £8. Middlings—Fine (Imported): London, £9 2s; Coarse (British): Bristol, £9; Hull, £8 5s; Liverpool, £8; London, £7 12s. Pollards (Imported): Bristol, £7 12s; Hull, £7 5s; Liverpool, £7; London, £7 5s. Rice Bran: Bristol, £7 17s; Liverpool, £7 5s. MEAL.—Barley Meal: Bristol, £11 15s; Hull, £11 13s; London, £12. Maize Meal: Bristol, £12 12s; Hull, £11 11s; Liverpool, £11 5s; London, £11 10s. Maize Meal (S. African): Bristol, £10 15s; Hull, £10; Liverpool, £9 15s. Maize Germ Meal: Bristol, £11 5s; Hull, £9 15s; London, £9 10s. Maize Gluten Feed: Bristol, £11; London, £10. Locust Bean Meal: Bristol, £9 15s; Hull, £9 15s; Liverpool, £9 10s; London, £9 15s. Bean Meal: Bristol, £13 15s; Hull, £11 18s; London, £13. Fish Meal: Bristol, £20 10s; Hull, £19; Liverpool, £18 10s; London, £19 10s.

EGGS AND DEAD POULTRY.

Egg supplies continue rather short, but, although the demand has fallen off, prices for all grades are unaltered. At the close, however, a firmer tendency was noticeable for best English eggs at London.

Week-end Prices—Eggs (per 120): British, 13s 9d, 12s 9d; Irish, 13s 9d, 13s 0d; Dutch, 15s 6d, 14s 9d; French, 15s 0d, 14s 6d; Belgian, 14s 0d, 13s 6d; Italian, 12s 6d, 12s 0d; Lithuanian, 11s 6d, 11s 0d; Egyptian, 7s. 6d, 7s 0d; Russian, 10s 3d, 8s 9d.

Dead Poultry (per lb.): Fowls—Surrey, 2s 0d, 1s 6d; Irish, 1s 8d, 1s 2d; Others, 1s 10d, 1s 4d. Ducks, 1s 9d, 1s 6d.

EGGS.

Per Doz.—Ashford: First, 1s 9d; Second, 1s 7d. Birmingham: First, 1s 3½d; Second, 1s 3d. Bridgwater: First, 1s 7½d; Second, 1s 5½d. Chelmsford: First, 1s 7¾d; Second, 1s 6d. Colchester: First, 1s 8½d; Second, 1s 6½d. Doncaster: First, 1s 6d; Second, 1s 5d. Dorchester: First, 1s 6d; Second, 1s 5½d. Exeter: First, 1s 5d. Hereford: First, 1s 2d. King's Lynn: First, 1s 6d; Second, 1s 5d. Llandilo: First, 1s 2d; Second, 1s 1d. Mold: First, 1s 3d; Second, 1s 2d. Newport (Mon.): First, 1s 4d; Second, 1s 3d. Norwich: First, 1s 6d. Oswestry: First, 1s 5d; Second, 1s 4d. Penzance: First, 1s 3d; Second, 1s 2d. Saffron Walden: First, 1s 8½d; Second, 1s 7½d. St. Ives (Hunts): First, 1s 7½d; Second, 1s 6d. Salisbury: First, 1s 7½d; Second, 1s 6½d. Skipton: First, 1s 4d. Truro: First, 1s 3d. *Carlisle: First, 1s 4d. *Derby: First, 1s 4d. *Ipswich: First, 1s 6d; Second, 1s 3d. *Lincoln: First, 1s 4d. *Shrewsbury: First, 1s 3d; Second, 1s 2d. *York: First, 1s 5d; Second, 1s 4d.

FOWLS.

Per lb.—Birmingham: First, 1s 6d; Second, 9d. Doncaster: First, †5s 0d; Second, †4s 0d. Exeter: First, 1s 8d. Hereford: First, 1s 7d. Llandilo: First, 2s 3d; Second, 2s 1d. Newport (Mon.): 1s 9d; Second, 1s 4d. Truro: First, 1s 5d. *Derby: First, †5s 6d; Second, †4s 0d. *Ipswich: First, 2s 0d; Second, 1s 10d. *Lincoln: First, †5s 6d; Second, †4s 0d. *Shrewsbury: First, 1s 6d; Second, 1s 4d. *York: First, †5s 6d; †Second, 4s 6d.

DUCKS.

Per lb.—Birmingham: First, 1s 8d; Second, 1s 4d. Doncaster: First, †5s 0d; Second, †4s 0d. Exeter: First, 1s 7d. Hereford: First, 1s 6d. Llandilo: First, 2s 3d; Second, 2s 1d.

*At these markets the prices quoted are for sales by producers direct to consumers. At other markets prices are those paid to producers by retails. † Per head.

"Eggs."
The Official Organ of the Scientific Poultry Breeders' Association.
Wednesday, June 24th, 1925.

CONTENTS.

EDITORIAL 409
LANCS. FEDERATION OF U.P.S. LAYING COMPETITION 410
MODERN POULTRY FEEDING 410
S.P.B.A. ... ... 411 and 421
MIDLAND FEDERATION OF FEATHER AND FUR SOCIETIES 412
ANSWERS TO QUERIES 413
POST-MORTEMS ... ... 415 and 420
CORRESPONDENCE 415
A STUDY OF RELATIVE VALUES OF CERTAIN SUCCULENT FEEDS 417
THE USE OF POULTRY AGAINST FARM PESTS ... 418
"LEICESTER MERCURY" COUNTY LAYING TRIALS 418
THE SPHERE OF THE NATIONAL POULTRY COUNCIL 419
MARKET REPORT 422

Contributions.—The Editor will always be pleased to consider contributions. Criticisms and queries are invited.

Interested readers are asked kindly to mention the existence of "Eggs" to the poultry-keeping friends.

Subscription to "EGGS," 12s. 8d. per annum; 6s. 4d. for six months, 3s. 3d. three months, post free.

Subscription to S.P.B.A., 5s. per annum.

Subscriptions should be sent to Mr. TOM NEWMAN, The Beeches, Rudgwick, Sussex.

Editorial Matter and Correspondence to the Editor, The Beeches, Rudgwick, Sussex.

All communications with regard to Advertisements should be addressed to Mr. S. H. Burles, "Eggs," 94, Farncombe Street, London, S.E.16. Telephone: HOP 894.

Classified Advertisement Rates will be found at top of first page of classified advertisements.

NOTICE TO ADVERTISERS.

Owing to the ever-increasing circulation of "Eggs," it is imperative that new advertisements and alterations are received by FIRST POST ON FRIDAY MORNING to ensure insertion in the following Wednesday's issue. It is hardly necessary to add that the earlier in the week we receive copy the better it is for every one concerned.

PROOFS.

We cannot guarantee to submit proofs unless complete copy is to hand by FIRST POST ON THE MONDAY PREVIOUS TO THE FOLLOWING WEDNESDAY WEEK'S ISSUE.

"INDEX FOR EGGS."

VOL. XI., 1925.

A.

Answers to Queries.—4, 16, 22, 40, 58, 77, 94, 107, 113, 126. 144, 166, 181. 190, 196, 203, 213, 229, 243, 257, 275, 292, 312, 332, 344, 364, 369, 383, 395, 413 Legal.—345.

B.

Breeding.—(Editorial)—1, 19, 37.

Bees.—Bees: Acarine Disease (E. W. D. Madoc) 102. Bee Stings.—119. Races of—148, 163. Spring Management—216. Combs——232. Some Dont's in Bee-Keeping—248. Buying Bees—296.

C.

Correspondence—5, 27, 45, 70, 84, 96, 120, 135. 149, 169, 184, 220, 233, 263, 283, 302, 315, 336. 347, 370, 386, 403, 415.

D.

Diseases.—B.W.D. (Major G. Saunders)—168. Coccidiosis — 278. Aspergillosis (S.P.B.A.)—281. Roup (S.P.B.A.)—291. Gapes (S.P.B.A)—391. Coccidiosis (S.P.B.A.)—352. Red Mite (S.P.B.A.)—353. B.WD: A Cure? (S.P.B.A.)—227. Diphtheria in Poultry (M. of A.)—342. Roup (T. W. Toovey)—357, Editorial—359. Diphtheretic Roup and Chicken Pox (T. W. Toovey)—403. Post-Mortems—5, 17, 31, 42, 47, 60, 79, 95, 101, 114, 130, 131, 146, 167, 181, 191, 204, 215. 231, 249, 253, 259, 277, 285, 301, 313, 356, 369, 384, 397, 415, 420.

Ducks.—Utility Duck Club Notes (H. B. Carrington)—13, 98, 100, 180, 242, 334. Notes on Utility Ducks (A. H. Paine)—249, 298.

E.

Editorial.—Breeding—1, 9, 37. Incubation—38, 55. The Poultry Industry in 1924—73. A Big Scheme—91. Chicken Rearing—99, 109. The Simplest Method of Securing a Living from Hens — 125. Community Poultry Farming—141. Some Every Day Questions—159. No Need to be at the Foreigners' Mercy—175. Co-operation—193. Evils of the High Record Craze—209. Selling Eggs by Weight—225. The Vitamin Mystery—241. National Poultry Council Meeting at Chester — 267. Line-Breeding and Egg Production—273. Dead-in-Shell: The Egg or the Incubator—289. Co-operative Marketing—309. Infertility—327. The Wellingham Experiments: Great Results—341. Roup — 359. Early Maturity and Future Production—377. On Management—393. Forcing for Egg Production—394. Some Interesting Points from our Readers—409.

F.

Feeding.—Modern Poultry Feeding: Whale Meal—2. A Complete Poultry Ration—20. Vitamin "A" and Leg-Weakness—63, 76, 176. The Nutritive Requirements of Poultry—111. The Rowett Experiments: Mineral Requirements—126. The Vitamin Mystery—195. Porridge and Rickets: Spring Feeding of the Layer—279. The Wellingham Experiments — 161. Leg-Weakness—247, 311. Blood Meal v. Fish Meal—247. Neck Moult and Early Hatched Pullet: Winter Production: The Economy of Milk—360, 361. The Albuminoid Ration 379. Grain v. Mash: Barley 410. The Nutritive Requirements of Poultry (J. B. Orr)—83, 102. Poultry Foods: Their Nature, Composition, Examination and Adulteration (H. T. Cranfield)—259, 294, 328, 346. The Wellingham Experiments—394. A Study of the Relative Values of Certain Succulent Feeds and Alfalfa Meal as Sources of Vitamin "A" (D. E. Davis and J. R. Beach)—417.

Fruit.—Some Fruit Growing Notes to Help Poultry-Keepers (F. W. Wheeler)—3, 66, 138, 153, 183, 285, 303, 363, 407.

I.

Incubation.—Breeding—38, 55. 162. The Hen and Incubator Combination—381.

Income Tax.—Poultry Farmers and In-Income Tax—222.

M.

Miscellaneous.—The National Egg Laying Test—14. Some Experiences of Selling Eggs for Sitting (Norah Sedgwick)—21. Description of the "Ulster" Brooder (Lieut-Colonel F. S. Macrory)—43. The Simplest Method of Securing a Living from Hens (Lester Spurgeon)—44. The Apex House (A. Morton-Nance)—56. The Internal Mechanism of the Egg-Laying Machine (J. L. Rosedale)—61, 80, 131, 142, 199, 217, 226. Housing: Some Experiences (B. E. Barwell)—69. Central Service System (A. Morton-Nance)—86. S.P.B.A. Council Meeting—87. Sanitary Science (A. Sayers)—105, 132, 155. Commercial Poultry Farming (T. W. Toovey)—116. The Use of Poultry Against Farm Pests (A. Roebuck)—206, 210. 418. Business Side of Poultry Farming (J. H. Dowden)—250. Housing (Martin Gray)—265, 280. Intensive System (J. Everard)—299. Some Information on Ventilation and Lighting also Span Roofs v. other Roofs ("Appliance Maker")—319. Leg-Weakness (M. S. Taylor)—331. The Sphere of the National Poultry Council (E. Brown)—419.

P.

Pigeons.—Table Pigeons (Miss E. Fidler)—390.

R.

Rabbits.—Angora Wool Farming (Lady Rachel Byng)—197, 262, 297, 329, 355. The Chinchilla Rabbit for Fur (H. J. Gardner) 362, 405.

Rearing. Some Mistakes We Make (Paper read in Lancashire, by T. Newman)—31, 40. Chicken-Rearing—99. The Intensive System (J. Everard)—299.

S.

S.P.B.A.—The Croad Langshan—11. The Intensive System—11. Fumigation of Incubators—12. Dead-in-Shell—25. Laying Trials—26. A Lancashire Trip—48. Substitute for Trap-Nests—48. Egg Preservative—48. Preserving Eggs in Lime Water—178. An Explanation: Fecundity—64. Body Size—82. Food Purchase Scheme—92, 134. Disease—93. B.W.D.: A. Cure?—227. Aspergillosis — 281. Roup: Gapes—291. Coccidiosis: A. Misnomer?—352. Red Mite—353. The Rose Comb and the Small Egg—93, 119. Precocity—134. The Australorp—147. Pile, Duckwing, and Cuckoo Leg: Club — 147. Leg-Weakness Again—147, 227. Some Eggs—164. The Breeding Season—164. An American View of Handling—202. Incubation and Altitude—219, 255, 314. The Polish Fowl—246. Egg Prices—255. B.W.D. and the Blood Agglutination Test—255, 290. The Registration and the Early Hatched Pullet—255, 290. Toe Picking—256. The "Feathered World" Year Book—281. Violet Rays—314. Sale and Transit of Diseased Poultry—314. Storing of Eggs for Incubation—314, 335. A Physiological Impossibility—352. The British Barnevelder Club Year Book: "Poultry-Keeping Do's and Don'ts"—367. The Goat—367. The Spring Chicken—368. A Few Questions—379. The Late-hatched Chick—380. Size of Egg—389. Roup—399. Table Poultry—400. The Clitheroe Laying Tests—400. Corrugated Iron Houses—401. Violet Rays and Chicken Development—401. Which Parent Transmits Fecundity—411. Is There a 300-Egg Hen—411. Potatoes—411. The Male Bird—412. Continuous Hatching—412.

EG

Wednesday, June 24th, 1925.

EGGS

THE OFFICIAL ORGAN OF THE SCIENTIFIC POULTRY BREEDERS ASSN.

(Founded in 1912 by RANDOLPH MEECH).

Registered at the G.P.O. as a Newspaper.
Vol. XI. No. 25. Copyright.

Edited by TOM NEWMAN.
Price TWOPENCE.

Twelve Months Post Free 12/8
Six Months " " 6/4
Three Months " " 3/3

The "Eclipse" Poultry Houses

Scientifically Designed.
Soundly Constructed.
The Very Best Materials.

Perfectly Ventilated.
Draught Proof.
Easily Erected.

Showing No. 8 (30ft. x 12ft.) Laying House.

If you are visiting the Royal Norfolk Show at King's Lynn on July 1st and 2nd be sure to inspect these houses at STAND No. 70.

Fullest particulars of the manufacturer—

HERBERT W. MARTIN,
Perivale Poultry Farm and Appliance Works,
ROCKLAND ST. PETER, ATTLEBOROUGH, NORFOLK.

PRIEST & SHAW.

PULLETS

UNDER ROYAL PATRONAGE
I.O.W
ALWAYS WINTER EGGS

Leghorns + + Wyandottes

Selected Pullets of our well-known strains from these popular breeds are now ready for delivery, and can be despatched immediately upon receipt of order.

WRITE FOR OUR 1925 PRICE LIST.

SANDOWN —— I.O.W.

Secure the Pick Now!

The breeding pens at "Heydown" are now being disbanded, and an opportunity arises to secure a limited number of **INDIVIDUALLY RECORDED, BLOOD-TESTED,** 1923 and 1924 hatched hens.

Our Catalogue, which is free for the asking, will explain to you fully, how and why **the "Heydown" Pre-eminent strains really excel.**

We are now also booking orders for Three Months' Old Pullets, also Cockerels, from our Special Cockerel Breeding Pens.

JOHN H. DOWDEN & SON,

M. Council S.P.B.A., National Poultry Council, Fellow N.U.P.S., Southern Committee N.P. Institute.

"HEYDOWN," HEATHFIELD, SUSSEX.

EXTENSIBLE UNIT BUILDINGS.

IF your brooding has been erratic, of if your pullet egg yield is below 200 there is something wrong. Many clients have raised their averages from 150/160 to over 200 eggs; I can ensure that figure without extra expense—consult me.

Representative Interior of a 200ft. x 15ft. Laying House, All Purposes Model (Patd. & Regd.), taken on an Early Spring day—observe uniform light and unimpeded floor. Photographed from central food implement store.

Please mention "Eggs."

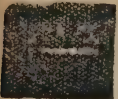
W. H. COLT, M.N.U.P.S., M.S.P.B.A., **Bethersden, near Ashford, Kent.**

For over a quarter of a century we have been recognised as the makers of the finest quality genuine

SUSSEX GROUND OATS

Samples of all our products, and current Price List with Carriage Paid terms are free with pleasure.

ALBION THORPE & SONS,
Rye, Sussex.



GALVANISED WIRE NETTING.

Remarkably good quality in fifty-yard rolls. England's lowest prices, per roll:

esh	guage	wide 1ft.	wide 2ft.	wide 3ft.	wide 4ft.	wide 5ft.	wide 6ft.
in.	19	3/1	5/6	7/8	10/3	12/11	15/6
in.	19	4/3	7/10	10/7	14/3	17/10	21/6
in.	20	7/0	12/10	18/3	25/0	30/7	37/9
in.	19	5/3	10/0	13/6	19/3	24/9	29/6

ote.—Order £2 and up carriage paid 3s. xtra, under £2 carriage paid for 2s. extra. atisfaction guaranteed or money back. Cash with order. Instant Despatch.

& H. SUTCLIFFE, 24, Wood Top, Hebden Bridge, YORKS.

DOWELL'S POULTRY RINGS.

Sizes 4, 5, 6, 7.

lluloid "SPIRALS" tra strong quality, 10 Brilliant Colours. ices: 300, 9/6; 150, -; 100, 3/6; 50, 2/-; , 1/3. Chick Ring ices as listed.

FLAT BANDS" in Colours, including n Striped Colours. ices: 150, 5/6; 100, -; 50, 2/3; 25, 1/3. uminium Embossed.

Numbered Rings. Adjustable or not. Prices: 150, 4/6; 100, 3/-; 50, 1/9; 25, 1/-. With date also. 6d. per 150 extra. **Illustrated Lists** of all Rings and Appliances free. **Special to the Trade. Factors, etc.,** d for samples, etc. Big discounts.

"THE OLD FIRM."

W. DOWELL, Mansfield Road, Aston, BIRMINGHAM.

Safety First with "Salca."

HEAVY LOSS IN TRANSIT.

good shell, and your eggs are pretty e from breakages in transit. Loss n this cause must be colossal. Ensure good shell by adding "Salca" to the mash.

Free pamphlet on request.

IFFORD de KUSEL, Otford, Kent.

The Algin Company
12, NORFOLK STREET,
STRAND, W.C.2.

Manufactures the Best

Alfalfa Meals

in the world, ground from prime South African hay. Guaranteed 97 per cent. fine green.

Caution. The great and steady demand for our valuable product, for egg production and chicken raising, even now with Spring and Summer at hand, has tempted certain people to refill our printed sacks with harmful imitations, not even flattering because they are so bad. Will buyers at once draw our attention to any case under suspicion. Standard samples for reference are placed with the S.P.B.A. and N.U.P.S.

For Egg Production it pays to use our Alfalfa Meal in Every Month of the Year.

No. 129—Record 484 in 2 years
Sired by a Tested Cock, son of Pensford Peerless, 790 in 4 years.

Now Booking 3 Months Cockerels.
Special Prices Quoted.

Our Strain has eleven years' trapping and pedigree work behind it.

1925 List on Application.

ALL PRICES NOW REDUCED.

THE MISSES RANSFORD
PERSEVERANCE POULTRY FARM.
PENSFORD, near BRISTOL.

TWO INVALUABLE AIDS
to Successful Poultry Farming.

SPECIAL OFFER

A copy of "Handling and Observation," together with a copy of "One-Man Poultry Farming," will be sent to any reader of "Eggs" for 2/-, Post Free.

Apply—
The Secretary,
S.P.B.A.,
The Beeches,
Rudgwick, Sussex.

Buy your COD LIVER OIL from the recommended source — BICOL LTD

FOR HEALTHY CHICKS Don't force them—feed them! Send 6/6 for 1-gal. trial drum of this High Quality Tonic Food. Better than spices.

SALES DEPT. PYEWIPE, GRIMSBY

REDUCTION IN PRICE.

3/3 per cwt., 60/- per ton, F.O.R., Garston, Liverpool.

ORIGINAL "SPECIAL LIMESTONE GRIT."

All Grades, same price, 98.65 p.c. Carbonate of Lime.

Oyster Shell and Flint Grit a back number.

10 Per Cent. Discount to S.P.B.A. & N.U.P. Members.

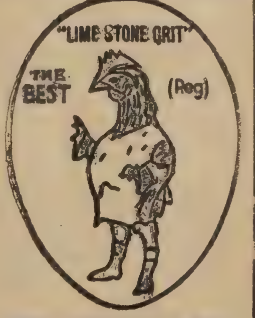
A hard sharp grit, making digestion perfect, and supplying poultry with the essential Mineral Foods necessary to the well-being and high vitality required to produce the highest type of egg-producing machine of to-day. "The Super Hen" so much sought after.

Reg. Trade Mark the Guarantee.

Sole Manufacturers and Suppliers, Wholesale and Retail,

E A PITTAM, S.P.B.A., Etc.,
DOCK ROAD, GARSTON, LIVERPOOL.

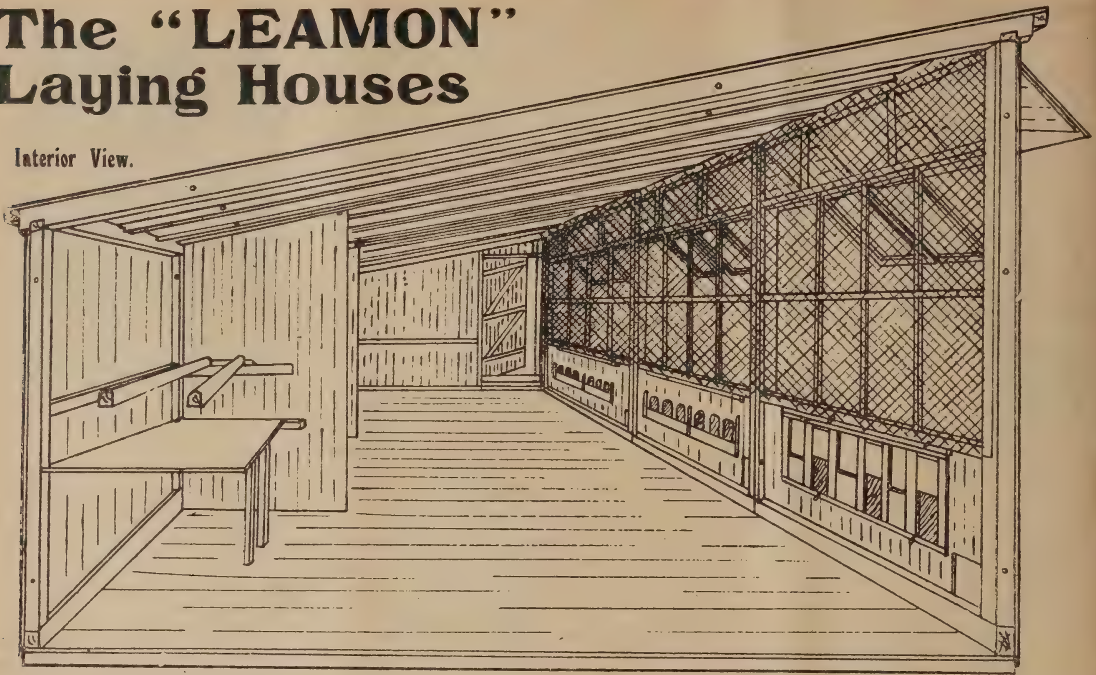
"Write for Free Samples and Quotations."



"ONCE USED ALWAYS USED."

The "LEAMON" Laying Houses

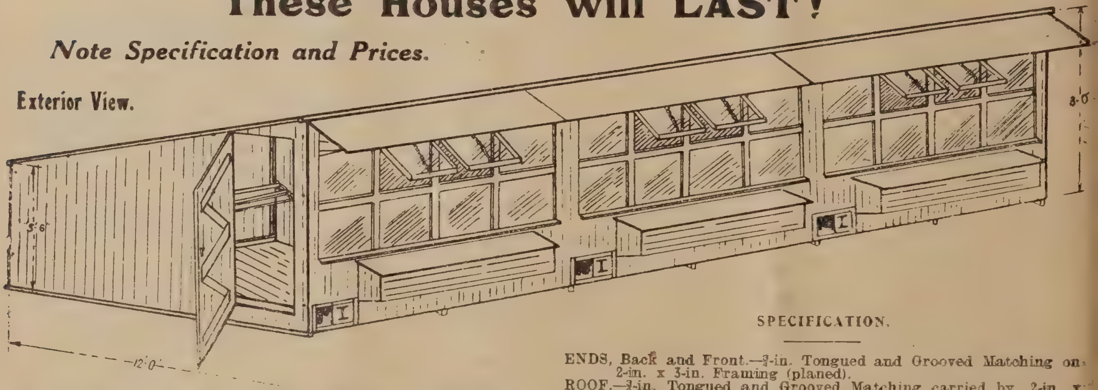
Interior View.



These Houses will LAST!

Note Specification and Prices.

Exterior View.



These Laying Houses, which are built in sections, are light and well ventilated.

They are designed with a view to giving the bird ample floor space when kept in during bad weather.

The roof is so constructed that it cannot be lifted by the strongest of gales, and the fronts are guaranteed absolutely Draught and Weatherproof.

REVISED PRICES OWING TO INCREASE IN COST OF MATERIALS.

Length.	Height.	Width.	PRICE. Without Floor	Floor Extra	Total.
10-ft.	8-ft.	12-ft.	£20	£6/10	£26/10
20-ft.	8-ft.	12-ft.	£35	£11	£46
30-ft.	8-ft.	12-ft.	£51	£15/10	£66/10
40-ft.	8-ft.	12-ft.	£66	£20	£86
50-ft.	8-ft.	12-ft.	£81	£24/10	£105/10
60-ft.	8-ft.	12-ft.	£97	£29	£126

CARRIAGE PAID TO NEAREST RAILWAY STATION.

SPECIFICATION.

ENDS, Back and Front.—¾-in. Tongued and Grooved Matching on 2-in. x 3-in. Framing (planed).

ROOF.—¾-in. Tongued and Grooved Matching carried by 2-in. x 4-in. Battens (planed).

FLOOR.—¾-in. T. and G. Boards on 2-in. x 3-in. Joists.

PARTITIONS.—These are pleaced every 10-ft. and covered with ¾-in Tongued and Grooved Matching on 2-in. x. 3-in. Battens (planed) They are covered with Matching 6-ft. from back.

DROPPING BOARDS.—3-ft. wide, the whole length of the House, with two perches

NEST BOXES.—One set of six Nests is provided every 10-ft., and can be fitted with Trap Nests if required, as shown in illustration, 15/- per set extra.

ATTENDANT'S DOOR.—One each end with lock and key. Glass 21-oz.

HEN EXITS.—One every 10-ft.

The Roof, Weather Board and Nest Boxes are covered with best quality Bitumen Felt. The whole House is bolted together in 10-ft. lengths.

Quotation for Army Hut Type of Houses or Laying Houses of any pattern given on application. Estimates for delivery by Road and erecting on Site.

Telephones:
171 FLEET.

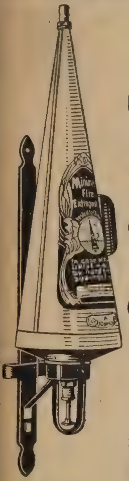
THE FLEET POULTRY APPLIANCE WORKS,

(Proprietor—
H. W. LEAMON).

KING'S ROAD, FLEET, HANTS.

An Up-to-Date Poultry Farm
deserves
UP-TO-DATE
FIRE
PROTECTION

This can only be obtained by installing appliances which are the result of scientific experiments.



'Minimax'
CHEMICAL HAND FIRE EXTINGUISHER

is the product of such experiments, and has proved its practical utility on over 67,170 actual outbreaks of Fire.

THE SIGN OF SECURITY.

Proofs of Efficiency upon application to:—

MINIMAX LTD. (BOX 537)
Head Office and Works:
Feltham, Middlesex.
"MINIMAX" Regd. Trade Mark.

GOOD HEALTH
WITH YOUR VALUABLE STOCK IS
ASSURED
IF YOU PROTECT THEM AGAINST SHARP CHANGES BY USING
"FIBRENT"
ASBESTOS-CEMENT.

For your Poultry Houses, Laying Sheds, etc. VERMIN PROOF. ROT PROOF.

Corrugated FIBRENT **Roof Sheets.**

Flat Sheets for Walls, Partitions, etc., easily and economically Fixed.
PANEL SHEETS FOR SPECIAL INTERNAL DECORATIVE WORK.
In writing, please state for what purpose required.

The British Fibrocement Works, Ltd.
Manufactured only at **ERITH, KENT,** Head Office and Works.
Telephone: ERITH 89.

London Office, Central House, Kingsway, W.C.2.
Telephone: Gerrard 6483.

Manchester Office: 97, Bridge Street.
Telephone: CITY 7856.

Birmingham Office: 14, New Street.
Telephone: CENTRAL 7292.

Bristol Office: 28, Baldwin Street.
Telephone: BRISTOL 272.

Also at Glasgow, Swansea, Dublin and Belfast.

CONTINUOUS EGG PRODUCTION
WITH
"VITALEX"
The New Bag-to-Hopper Commercial Feed.

Cut out that "sprint" egg production and re-create your flock with natural ability to produce to their maximum, in quality and in quantity . . . . by feeding them on the food that is guaranteed to CONTAIN GREATER VARIETY, BETTER BALANCE AND FINER NUTRITION than any other food on the market.

Save your birds that early moult, and assist their desire to continue laying right through the summer, even while they are re-feathering for the colder weather. VITALEX does this—it is a wonderful amalgamation of fourteen selected and perfectly balanced ingredients, free from grit or any impurity, and guaranteed to increase both egg production and the all-round welfare of your birds by at least ten per cent. in a record short time.

SEND FOR A TRIAL PARCEL RIGHT NOW AND START AT ONCE TO PROLONG THE LAYING LIFE OF YOUR BIRDS!

Over two tons ...	£13 0 0 per ton.	10 cwt.	£6 17 6
One ton	£13 10 0	5 cwt.	£3 10 0

SAMPLE CWT. ... ... 14/6.

Cash with order ONLY.
Carriage paid in United Kingdom.

VITEX LTD. **WEST BROMWICH**

ALWAYS USE
INTENSIVE HOUSES
BUILT BY
PHIPPS
—of INCUBATOR Fame,
and increase your egg yield
Ask for New Big Catalogue
A.E.W. PHIPPS
No 4 Harborne, Birmingham
'Phone: Edgbaston 268
Wires:- INCUBATOR Harborne

Sizes from 7ft. 6in. to 100ft. in length

Prices from £5 19s.

Carriage Paid in England and Wales.

"CARMAC"
THE NAME "CARMAC" IS A GUARANTEE OF QUALITY.

DRIED
SKIMMED MILK POWDER
IS NOW MUCH
CHEAPER

CHICK FEEDS AND POULTRY FOODS,
BEST QUALITY AT LOWEST PRICES.

MIXED ORDERS A SPECIALITY.

Write for Price Lists and Samples to—
CARR, MACDONALD & CLEVELY, Ltd.,
6, BROAD STREET, RATCLIFF,
LONDON, E. 1.
And at BRITANNIA MILLS, HEATHFIELD, SUSSEX.

CHEAP HEAT & NO TROUBLE

The Little Putnam Stove holds 3 pints of oil and burns a month without attention

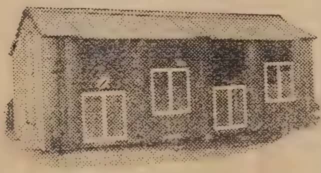
The Putnam Brooder Heater holds a quart of oil and burns 10 days without attention

No other Burner in the World will do it

My Catalogue, including Poultry Helps by Putnam, FREE on receipt of 3d. Stamps to cover postage

M. F. PHELAN, NORTHAM, N. DEVON

A LAYING HOUSE
16 ft. x 8 ft. x 6 ft. 6 ins.
£13 2s. 6d.
Carriage Paid 100 Miles.



The Queniborough House, Size No. 1. Designed as illustrated. A perfect house for Winter Egg Production.

Illustrated Lists Free.
W. & T. MARKHAM, S.P.B.A.,
Dept. "A,"
QUENIBOROUGH, LEICESTER.

FORGING AHEAD!! ON ITS OWN MERITS
Manufactured by DONNELLY BROS., Braidwood, by Carluke,
Fresh Butchers' Bones and Meat only. —— No knackery stuff.
"NELLFIELD" BONE & MEAT MEAL
Albuminoids, 35.12. Phosphoric Acid, 19.39. Tribasic Phos. of Lime, 42.35. Oil, 4.6
STERILISED - TAINTLESS - ALWAYS SWEET
NOTE! The all-important Mineral Content
MEANS
INCREASED EGG PRODUCTION
IMPROVED STAMINA
Thereby repelling Disease.
STRONGER FERTILITY
Hence more Vigorous Chicks.

Sole distributors to Wholesalers in the U.K. and ABROAD—
BROWN & CO., 183, West Campbell Street, GLASGOW.
With whom Dealers and Merchants wishing supplies might communicate.

TRAP-NEST RECORD CARDS,
giving records of 21 fowls on each side,
1/3 dozen, 6/6 per 100, 250 for 14/6.
Also stocked for 50 fowls on each side,
2/6 dozen, 17/6 per 100.
Also Trap-Nest Books, Hatching Records, Pedigree Books, Poultry A/c Books, &c. Specimen Rulings Free.
RIPPIN & BAKER,
The Newarkes, Leicester.

W. MASON, M.S.P.B.A.,
"Littledale" Poultry Farm,
HALAM, Nr. SOUTHWELL, NOTTS.
WHITE LEGHORNS, W. WYANDOTT
ANCONAS, R.I.R.
Stock Fully Recorded to Date.
Pullets. Individually Hatched Cocker
From High Record Hens.
Cash or Deposit. Tel.:

lassified Advertisements.

(PREPAID RATES).

per word—minimum charge, 1s. 0d. Bold
dlines inserted at an extra charge per
sertion according to size as below:—

Y-OLD CHICKS,	per line,	extra	9d.
Y.OLD CHICKS,	„	„	1s.
Y-OLD CHICKS	„	„	1/6

ie number of letters, punctuations and
ces between words should be totalled,
n the following table will be of assist-
e:—

size allows for Thirty-one to one line.
ize allows for Twenty-seven to one line.
size allows for Twenty-one to one line.

hen the remittance does not cover the
selected, a smaller corresponding size
will be used.

rtion constitutes acknowledgment of
ittance in the case of pre-paid adver-
ments. For a series of 13 insertions or
more, a receipt is forwarded.

B.—Advertisements, unless accompanied
orrect amount, will not be inserted.

lvertisements must be distinctly
ked with the Heading under which
are to appear.

lvertisements must be written on a
rate sheet of paper, and one side
he paper only.

me and Address to be counted. In the
of a Box Number being used, the
ls. "Box," "Eggs," 94, Farncombe
et, London, S.E.16, to be counted as
t words, i.e., making a total extra
ge of 1s. 8d. (1s. for Box; 8d. per
ess) per insertion.

dvertisements must reach this office
FIRST POST FRIDAYS
insertion in the following Wednesday's
. Those received after this time will
serted in the next issue.

**EASE WRITE CLEARLY, and TO
ID MISPRINTING OF STRAINS,
IES AND ADDRESSES, THESE
ULD BE WRITTEN IN PRINTED
RACTERS.**

splayed Advertisements.

linary Page, £8 15s. 6d.; Half Page,
. 9d.; Quarter Page, £2 5s. 0d.; One
nn, £2 18s. 6d.; Half Column, £1 9s. 3d.;
ter Column, 14s. 6d. One inch, 6s. 6d.
al Inside Pages, 25 per cent. on above
. Cover and other Special Position
arrangements. Discounts for Series.
Scale of Advertising Rates on applica-

vertisements, addressed to Mr. S. H.
LES, "EGGS," 94, FARNCOMBE
ET, LONDON, S.E.16, MUST REACH
Y FIRST POST FRIDAY MORNINGS,
nsertion in following issue. Those
ved later will be inserted in the next

POSIT SYSTEM has been adopted for
tisements, and Advertisers are asked
ke full use of same. When remitting
to the Editor on deposit, the full
nt of purchase money should be sent,
ix penny stamps extra to cover cost
cknowledgment of same. Cheques
d be made payable to the Editor, and
direct to The Beeches, Rudgwick,
x.

EGGS.

FOR SALE.

ALEX. J. BELL, M.S.P.B.A., U.D.C., Longwick P.F., Princes Risborough, Bucks. R.I. Reds, White Leghorns. Eggs, Chicks, Stock Birds. List free. Satisfaction insisted on. (See under Ducks and Drakes also).

How many eggs do your fowls lay?

Every pullet is a potential layer of 900 eggs, but you must feed for eggs *from birth* to get them.

The egg-making organs must be carefully nourished, and developed from babyhood—vitality, too, must be stored up to ward off disease and to cut down eggless periods.

Ful-O-Pep Growing Mash, in the red-striped bags, makes chicks "make good" as layers because it is scientifically balanced and perfectly blended, assuring maximum development and health.

You get the highest possible egg production the easy Ful-O-Pep way.

For complete information on this most vital subject, write for your free copy of the Ful-O-Pep Handy Monthly Guide, the most valuable book on Incubation, Rearing and Poultry Husbandry.

FUL TRADE -O- MARK PEP

GROWING MASH

NO MIXING : NO HEATING WATER: NO TROUBLE

The Ful-O-Pep Guide has detailed suggestions for every month in the year, also 12 monthly egg charts for you to record your eggs. Sent free and postage paid.

Ful-O-Pep Poultry Feeds are made and guaranteed by Quaker Oats Ltd., 11, Finsbury Square, London. E.C.2.

EGGS AND CHICKS.

FOR SALE.

R. H. Berney, M.A., Cantab, offers Sittings of Eggs in W. Runners, and W. and F. Runners; all related to Laying Test Winners; from 5s. per sitting.—West Common, Harpenden.

Watson Bros. offer splendid value in Eggs for Hatching and Day-Old Chicks. Having spared no expense to procure the very leading strain to stock our 25-acre farm, Watson Bros. claim to be in the position to give you what you require in both quality and quantity promptly, having an incubating capacity of thirty thousand eggs on the farm, or eggs for hatching from none but free-range birds. We stock Black and White Leghorns, Anconas, Rhode Island Reds, and White Wyandottes. Prices: Chicks, 10s. for 12, 20s. for 25s., 40s. for 50, £4 per 100; Eggs, 6s. for 12, 10s. for 25, 20s. for 50, 38s. per 100. Special Pen, Chicks 15s. per 12; Eggs, 7s. 6d. per 15. Special offer of 50 Chicks and reliable Brooder complete, wood or galvanised, 57s. 6d. Your own selection in all offers. Sent carriage paid in free packages; live delivery guaranteed; eggs not replaced.—Watson Bros., Weasal Hall Farm, Hebden Bridge.

Pure White Wyandottes, Black Leghorns, large egg strain; Day-Old Chickens, 8s. dozen; Week-Old, 9s. 6d.; Fortnight, 11s; Three Weeks, 12s. 6d.; carriage paid to nearest station.—F. Kellaway, Ryme Poultry Farm, Yetminster, Dorset.

Bryn Poultry Farm, Bishop's Castle, Salop. (P. Mills).
1st HARPER-ADAMS. BUFF ROCKS, White Wyandottes, Light Sussex. Eggs from 4s. doz. Chicks, 12s. First Cross, 10s. Six weeks old Pullets, 42s.

BEST STOCK AT LOWEST PRICES.
Now is the time to buy Eggs or Day-Old Chickens at the lowest possible prices for the highest quality stock. Our stock is famous for its hardiness and heavy-laying powers. Trap-nested strains of R.I. Reds, White Wyandottes, Light Sussex, Buff Sussex, Buff Orpingtons, Barred Rocks, White Leghorns, Black Leghorns, Anconas.
EGGS: 5/-, 12.
10/-, 26; 17/6, 50; 30/-, 100.
Our Breeding Flock of nearly 5,000 Selected Birds is the product of 18 years' breeding for laying powers and stamina.
CHICKS: 10/-, 12;
20/-, 25; 37/6, 50; 70/-, 100.
Thousands of our chickens have been sent to customers throughout Great Britain, and repeat orders are received daily, testifying to the complete satisfaction invariably given by our stock. You cannot buy better or stronger chicks at any price. Send for Free Illustrated Catalogue.

EASTMAN BROS.,
SUFFOLK POULTRY FARM,
HADLEIGH.

PULLETS.

FOR SALE.

A Few Single-comb White Wyandotte Pullets, bred from trap-nested stock, offered at reduced prices. Three Months Old, 6s. 6d. each; Four Months Old, 7s. each. Approval and carriage paid.—Bennet and Pike, Poultry Farm, Ashey, I.W.

Light Sussex Pullets, three months, 7s. 6d.; four months, 9s.—Major Jackson, Kingston, Lewes.

SISTERS SILVER MEDAL WINNERS,
BENTLEY, 1923, R.I.R.
Sire's dam, 283.
BLACK LEGHORNS, SNOWDEN'S.
238-260. Sire's dam, 266.
WHITE LEGHORNS, CAM'S.
200-260. Sire's dam 275. All Pullets trap-nested. Chickens, £3, 100; Eggs, 25s., 100; Two and Three Month Pullets, 7s. and 9s.; Cockerels, 4s. and 6s each. Quantities cheaper.—Ekins, S.P.B.A., Grange, Wellingborough.

PULLETS.

FOR SALE.

Black Wyandotte Pullets, early February hatched; Essex strain; 10s each. — Apply, C. I. Sandys-Thomas, Andersea, Wellington, Somerset.

Light Sussex Pullets, all ages (Rothschild's), March hatched; 7s. 6d. each. Cockerels same price. White Wyandotte Cockerels (Cam's), January hatched, 10s. 6d.; February, 8s. 6d.; March, 7s. 6d. Carriage paid on four or more.—Mrs. Munday, Mersham, Kent

Pullets, three to four months old, 6s. 6d., 7s. 6d., 8s. 6d.; carriage paid.—Wood and Bacon, Arle Poultry Farm, Cheltenham.

White Wyandotte Pullets, four to five months old, bred from hen laying 253 2⅜oz. eggs pullet year; sire from 260 2½oz. hen. Price, 10s. 6d. each. Few Cockerels, 12s. 6d. each.—Reverend Goodwin Courtman, Awre, Gloucestershire.

PULLETS FROM BLOOD-TESTED STOCK.

White Leghorn, Black Leghorn, and R.I. Red Pullets, bred from same pen as my birds holding 2nd position, Midland Laying Test; records sent if desired, from 10s 6d.—Mrs. Athol Stuart, Boxmoor. Herts.

ONLY THE BEST.

Six fine well-grown January, 1925 R.I.R. Pullets, parent stock direct from Bostock Smith's Pen 1 in February, 1924; 15s. each. Ten February hatched, from same birds, 12s. 6d. each. Twelve February hatched Light Sussex, Bostock Smith's Pen 1; 12s. 6d. each All free range.—Miss Graham, Branstone Lodge, Burton-on-Trent.

ALEX. J. BELL, M.S.P.B.A., U.D.C.,

Longwick P.F., Princes Risborough, Bucks. R.I. Reds (Boucher), White Leghorns (Montague). Pullets, all ages, January to March hatched, from 8s. 6d., carriage paid. Satisfaction insisted on.

1925 PEDIGREE PULLETS.

Five months. 12s. 6d.; four months, 10s. 6d.; three months, 8s. 6d. Cockerels, 14s. Fine Utility Birds, and true to type; bred on free range; carriage paid. Cash with order. — Capt. Roberts, Hayes Poultry Farm, Ashley Heath, Ringwood, Hants.

PHILIP CLAPHAM.

My surplus of Cheaper Three Months Pullets is now sold. I have a few to spare from trap-nested hens, by cockerels from H.-A. Gold medal Pen, at 21s., 15s., and 12s. 6d. Send for my free catalogue. — Sherriffs Farm, Lyonshall, Herefordshire.

DERRINGSTONE RHODE ISLAND PULLETS.

We are now booking orders for the Autumn for our early-hatched Pullets. Wonderful colour and excellent winter layers. Quotations and particulars on application.—Percival F. Gleed, Derringstone Poultry Farm, Barham, near Canterbury.

BARNEVELDER PULLETS.

Can spare some Early 1925 hatched Pullets from £1 each. Also late 1924 Pullets, sisters to present Harper-Adams' Laying Test Pen, which to date lead in their class through all winter months; make grand breeding pen for coming season, from 30s. (fit to show). These are from my best layers of large brown eggs; good winter records. Bronze Medal, Harper-Adams' Laying Test (two pullets laid over 200 each, securing two certificates, 1,250 eggs laid in 48 weeks by seven pullets, only 16 second grade). Wye Winter Test they won second in all heavy varieties.

MRS. MANWARING,
"PLOVERS," HORSMONDEN, KENT.
S.P.B.A., BARNEVELDER CLUB, POULTRY CLUB.

PULLETS.

FOR SALE.

Great Fransham Poultry Farm, Dereham, Norfolk. First Cross Pullets available; three months old, 5s. 6d.; four months old, 7s. each; carriage paid; cash with order. Money gladly refunded if not amply satisfied.

Fourteen White Leghorn Pullets, 14 weeks old, and 15 at eight weeks old; bred from trap-nested hens; sire brother to medallist at Bentley, 1924; 8s. 6d. and 6s. each.—A. Copeland, Weston Park Avenue, Shelton, Derby.

THESE ARE SURE TO PLEASE.

Twenty R.I.R. Pullets, February, 1925; Crowley-Measures; 10s. 6d. each. Faulkner, Hill Park Estate, Fareham (M.S.P.B.A.).

NOTICE TO QUIT

at November Term compels me to dispose of several Wyandotte and Leghorn Pullets. Foundation Pens mated direct from Frank Snowden, records up to 272. Also several 1924 Pullets, all trap-nested winter months; some to date, could mate a few good foundation pens from these 1924 birds, giving full pedigree. Detailed particulars.—Allan Thomson, Gowanbank Pedigree Poultry Farm, Avonbridge, Stirlingshire.

COCKS AND COCKERELS.

FOR SALE.

Rev. Seymour Shaw, Warcop, Westmorland, offers February, 1925, Special Pen White Leghorn and R.I.R. Cockerels; 7s. 6d. and 10s. each. These are high-class breeding stock.

Mrs. Athol Stuart, Oaklands, Boxmoor, offers Three Months Old Cockerels and Pullets, from trap-nested stock, and closely related to her pen in the Midland Laying Test in Rhode Island Reds; also White and Black Leghorns. Prices from 8s. 6d.

Early March hatched W. Leghorn Cockerels, Padman strain; 5s. 6d. each. — Miss N. Woods, Nara, Watford.

INDIVIDUALLY PEDIGREED SIRES.

White Wyandotte, Leghorn, R.I.R., Buff Rock. Very moderate prices.—Brundrett, S.P.B.A., Old Mill P.F., North Hayling, Hants.

ONLY THE BEST.

Four Fine January, 1925, R.I.R. Cockerels; also Six February hatched; 12s. 6d. each. All bred from parent stock direct from Bostock Smith's Pen 1 in 1924. Four White Wyandotte Cockerels, February hatched; 12s. 6d. each; parents from Barron's Pen 1 eggs.—Miss Graham, Branstone Lodge, Burton-on-Trent.

MARSH DAISIES.

VISCOUNT CANTERBURY

Has for sale Cockerels and Pullets, bred from his noted winners and utility stock. Prices according to age and pedigree. — Apply, The Steward, Estate Office, Bergh-Apton, Norfolk.

RANSFORD COCKERELS.

A few 1925 Cockerels, direct from the Misses Ransford's Special Pen and Pen VI. Individual records, etc. — A. M. Brown, Broomfield, Luss, Dumbartonshire.

BUY NOW AND SAVE MONEY.

R.I.R. COCKERELS, February Hatched.

Dam's records from 245-273, from 15s., carriage paid on six. Beautiful February-March Pullets, from high individual records stock; from 12s. 6d.; limited number.—Miss Hasler, S.P.B.A., Frinton-on-Sea.

COCKS AND COCKEREL

FOR SALE.

Light Sussex (Harrison Bell), R.I.
(Golden), Black and White Leghorns (
Snowden); all direct. Hatched Dec
to March. Reasonable prices, acc
to age.—Particulars from: Capt. B
Kenilworth.

White Leghorn Cockerels, three mo
William Cook and Son's strain;
splendid stock birds for next seaso
6d. each, 7s. 6d. couple; carriage pa
Arthur P. Fenton, Laurel House, Bi
Leeds.

Three R.I.R. Bostock Smith direct
also Two Light Sussex Cocks, earl
hatched; Rothschild strain; 10s. each
riage paid.—Brindle, White Chimney
Tolleshunt Major, Maldon, Essex.

Rhode Island Cockerels, Januar
ruary hatched; pure Boucher's, fro
6d. each. Approval.—Rev. R. Pu
Ripley Rectory, Harrogate.

Mrs. Robert Pierce, M.S.P.B.A., Ch
ton Hall, Cambridge, offers a few g
little Cockerels, Barnevelders (Mrs.
man Parish direct), hatched. 7th
also Silver Campines (Col. Lucas d
hatched end of April; 8s. each.

METCALFE BLACK LEGHOR

From pullets, with good winter re
March hatched; 10s. 6d. each. Feb
hatched R.I.R.; 10s. 6d each.—G. Cal
Wells, Norfolk.

COME NORTH FOR STAM

Cockerels possessing character, bre
stamina and vigour, from direct
pens, Frank Snowden. Wyandotte
dam records 240 to 272, sire son of 30
"Yorkshire Peeress," January and
ruary hatched, 20s. each; March, 1
each. Eight individually marked, h
January 5th, 30s. each. Leghorn Pe
records 240 to 252, sire son of 29
"Missouri Princess," February ha
20s. each; March and April, 17s. 6d.
All on approval.—Allan Thomson,
bank Pedigree Poultry Farm,
bridge, Stirlingshire.

SILKIES.

FOR SALE.

**Silkies, Mrs. Campbell's strain;
each; carriage paid on three.—Mrs.
Odstock, Salisbury.**

BANTAMS.

FOR SALE.

Mrs. Pridham, Stoke Saint Mary,
ton, Somerset. Columbian Wyan
Eggs, 5s. dozen.

HENS.

FOR SALE.

1924 White Wyandottes, White Le
and Rhode Island Reds. Every bir
nested; 6s. 6d each, carriage paid
Also a few 1923 Wyandottes and Le
with records of 210 to 298. Full rec
pedigree given. State your requir
and I will quote you by return.
Tootall, Thorncliffe Poultry Farm
row-in-Furness.

White Leghorn Hens (1923), trap
records 200 to 246; splendid breeder
7s. 6d. each. — Particulars from
Fleming, Estate Office, Wall Hall, W

HENS.

FOR SALE.

LIGHT SUSSEX 1924 HATCHED HENS.

UND BREEDING STOCK FOR 1926.
ee from disease. Silver Cup and other
ards in laying tests; 10s. 6d. each.—
dsmark, Sellindge, Ashford, Kent.

BARGAIN.

,000 R.I. Reds, Black Leghorns, White
ghorns; all 1924 Hens; trap-nested
ck; must sell to make room for pullets;
each. White Leghorns are sisters to
pen in Harper-Adams' 1924-25, and
ined five certificates, also 10 exception-
y well-bred White Leghorn Cockerels,
ed from this pen, four months old; 21s.
ch.—W. G. Pitt, Woodley Poultry Farm,
msey, Hampshire.

DUCKS AND DRAKES.

FOR SALE.

haki - Campbells; Campbell-Pettipher
ect. Eggs, 7s. 6d. dozen. Ducklings
uble; from selected trap-nest birds.—C.
binson, Grateley, Hants.

arge Aylesbury Ducklings, 14 days; £1
r dozen; month old; £2 per dozen. —
ke, Poultry Farm, Topcroft, Bungay.

oscovy Duck Eggs. 5s. 6d. sitting. —
rcer, Tithebarn Farm, Kirkby, near
verpool.

ugh Kershaw, S.P.B.A., The Old Rec-
y, Keighley. Ducklings hatching weekly
m my famous White Aylesburys, includ-
1st prize winners. No. 1 pen, 17s.; No.
14s. doz. Week-olds or more, 2s. extra
each week. Eggs half price.

ight Khaki-Campbell Ducklings, Capt.
ng-Oscar Brown strains; month old.
—Payne, Wistaria, Hadleigh, Suffolk.

lock of 46 Ducks, Buff Orpington, Cook's
st; six, three year; twenty-five two
ar; remainder one year. First reasonable
er secures.—Smith, Kellie, Pittenweem,
fe.

haki-Campbell Breeding Pens. Pullet
cks, Drakerels, from pedigree trap-nested
ck. — G. Simmons, Burleigh Poultry
rm, Brimscombe, Glos.

LEX. J. BELL, M.S.P.B.A., U.D.C.,
ngwick P.F., Princes Risborough, Bucks.
aki-Campbells (Campbell and Raye), Run-
rs (Paine and Carrington). Eggs, Day-
ds, and Stock Birds. List free. Satis-
ction insisted on.

GEESE.

FOR SALE.

H. Lake, Poultry Farm, Topcroft, Bun-
y, has fine Massive Goslings; living en-
rely on grass three weeks; 6s. each; five
eks, 7s. each. Carriage paid. Guaranteed
proval.

Fine Massive Goslings, Embden-Toulouse,
ne weeks old, 6s.; ten weeks, 6s. 6d. each.
so Two Young Geese and Two Ganders;
s. each; carriage paid.—N. Brindle, White
imney Farm, Tolleshunt Major, Malden.
sex.

Five Toulouse Goslings, month old; 7s.
. each. Carriage paid. — Holdsworth,
inghorn, Fifeshire.

Emden-Toulouse Goslings, April hatched;
rong, healthy birds; supplied in lots 12
wards, at 7s. each, carriage paid. — Roe
alley Farm, Limavady.

TURKEYS.

FOR SALE.

Eighteen Second Season Hen Turkeys, still in full lay; about 20lbs.; cheap. —Bonfield, Brightling, Robertsbridge. Sussex.

Mammoth Bronze Turkey Eggs, 6d. each, postage 1s. extra.—D. E. Whell, Hartswell, Lostwithiel.

BREEDING PENS.

FOR SALE.

Six White Leghorn Hens and Cockerel (Padman-Barron); £2 2s.; carriage paid; deposit.—Miss Buck, Scotton, Norwich.

Twelve Light Sussex 1924 Hens, with 1924 Cockerel (Adams direct); £4 15s. Approval. —Rev. R. Pulleine, Ripley Rectory, Harrogate.

DERRINGSTONE WHITE LEGHORNS.

Proved Breeding Pens for sale, 1923 Hens with vigorous Cockerels, at low prices. Quotations and particulars upon application.—Percival F. Gleed, Derringstone Poultry Farm, Barham, near Canterbury.

NOTICE TO QUIT

at November Term, compels me to dispose of several Proved Hens in Leghorns and Wyandottes; records 200 to 272. Foundation Pens were direct mated from Frank Snowden.—Full particulars, Allan Thomson, Gowanbank Pedigree Poultry Farm, Avonbridge, Stirlingshire.

DOGS.

FOR SALE.

Bonny Black and White Bitch; two years· good guard and ratter; used poultry and children. Gift to good home for carriage.—Brownmoor Poultry Farm, Great Crosby.

RABBITS.

FOR SALE.

Two Grand White Angora Does and Unrelated Buck; 30s. Also Young Doe, in kindle; 15s.; excellent woolling strain; good Havana Doe, in kindle, ten months old; 12s. 6d.—Elisha, M.S.P.B.A., Fifield, near Maidenhead.

Mrs. Groves, The Glen, Stanford-le-Hope, Essex, offers several good Chinchilla Giganta Maiden Does (The Premier Fur Breed). Ready for mating. Young stock. Unrelated pairs. Fees, 12s. 6d. Enquiries invited.

Young Chinchillas for Sale, from 10s. 6d., carriage paid; Bucks or Does. White Angoras, same price; Chinchilla and Angora Bucks at stud, fee £1 1s., return paid.—Mr. and Mrs. H. J. Gardner, Old House Farm, Thakeham, Pulborough, Sussex.

Pure Chinchilla Youngsters for Sale; various ages. Grigson, East Harling Hall, Attleboro'.

Lester Spurgeon (Woldingham), breeder of Blue Beveren, Havana, Chinchilla, and Argente Rabbits Bucks at stud, including Ch. "Woldspur Billy Boy," winner Rose Bowl, Cup , etc.—Address (rabbits only), **Woldspur Rabbitry, Biggin Hill, Kent.**

RABBITS.

FOR SALE.

Lady Rachel Byng, Angora Rabbit Farm, **Sandhoe, Hexham, Northumberland. Exhibition and Wool Stock for Sale. Vacancy Day Pupils and Lady Apprentices.**

CHINCHILLAS, ARGENTES DE CHAMPAGNE, BLUE BEVERENS, HAVANAS, SITKAS, AND TANS.

The most profitable breeds for fur and food; also beautiful White Angoras, for wool production. Breeding and Exhibition Stock always for sale at prices consistent with quality. All are bred on scientific lines, and are closely related to my recent winners at the Crystal Palace, Leicester, Blaydon, Redruth, Peterborough, Newbury, Maidenhead, Dover, Horsham, and many others.

OVER 100 AWARDS LAST YEAR,

including various Specials, in keenest competition. Colour and texture are two strong features in the "Heaselands'" Stud. If your present stock fails in either of these all-important properties, introduce one of my young bucks, or send your does to be mated to one of my winning bucks, particulars of which will be sent on application.

E. BOSTOCK SMITH,

"Heaselands," Barham, Canterbury

GOATS.

FOR SALE.

Toggenburg Nanny and Kid, 18 months old; £3, or Exchange K.-C. Ducklings or R.I.R. Pullets.—Brownmoor Poultry Farm, Great Crosby.

APPLIANCES.

FOR SALE.

Galvanised Steel Corn Bins, 1cwt., 8s ; 2cwt., 13s.; 3cwt., 19s.; 4cwt., 24s.; 6cwt., 31s. 6d.; 8cwt., 37s. 6d Hinge lids. Carriage paid—Hudson, Sheet Metal Works, Patricroft, Lancs.

Poultry Fattening Appliances. — Neve Bros., Heathfield, Sussex. Catalogue free.

Fittings and Felts for Egg Boxes (any size cut); state wants. Egg Boxes, Chick Boxes. Lists free.—Hodges, 12, Baldwin Terrace, Peter Street, Islington, London.

TRAP-NEST SATISFACTION!!
THE NEW PRINCIPLE.

(Patent No. 221960/24).

Invented by experienced poultryman to save time and temper! No hinges, wires or triggers; perfectly clear entrance; normal depth nest; absolutely reliable. Particulars free; sample, 3s , carriage paid.—Widdicombe, Dersingham, King's Lynn.

MY ALL-WEATHER HOPPER

Makes open-air feeding easy; saves time, labour Stamp, particulars. — Rhymes, S.P.B.A., Northway, Tewkesbury.

GENUINE BARGAIN.

7,800 Eggs Stanworth-Soole Mammoth Incubator for sale at close of season at end of June. Splendid hatcher. Reason for selling installation of larger double-deck Mammoth. Price, £275, complete and in perfect working order, as used this season. —Eastman Bros., Suffolk Poultry Farm, **Hadleigh.**

APPLIANCES.

FOR SALE.

Hebditch's Excelsior Poultry House, 9ft. x 5ft.; complete with floor; excellent condition; cost £11; will sell for £5, owing to removal. Carriage paid 100 miles.—Sharman, 88, Woodmere Avenue, Wickham Road, Croydon.

POULTRY BASKETS.

Crates, Round and Square Exhibitions, Egg Baskets, etc. List free.—Fred Cole, Manufacturer, Willingham, Cambs.

FOX'S TRAP-NEST FRONTS.

Simple, durable, reliable; sample three, 6s.; 21s. dozen, carriage paid.—Fox, Hebron, Colnbrook, Bucks.

YOUNG'S "GEM" HOPPER. NONCLOG—NO FOOD WASTE. RAT, VERMIN & WATERPROOF.

Hundreds used. Send for testimonials. Strong Galvanised Iron. Satisfaction guaranteed, or money refunded.

CARRIAGE PAID PRICES.

8in., 7s.; 12in., 9s. 3d; 18in., 11s. 6d.; 30in., 15s.; 36in., 18s. 6d.; 42in., 24s.; 54in, 29s. 6d.; 5 per cent. on three; 10 per cent. on six. Everything for Poultry

**F. A. YOUNG, JUN.,
HORNE,
HORLEY, SURREY.**

SUPERFELT DISCOUNT 22½%.

For roofing and building. Lieut.-Colonel Dudding says: "Had some Superfelt two years ago, wears well." Mr. Tom Newman uses it. 22½ per cent. off £10 lots; 17½ per cent. off £5 lots; 12½ per cent. off £1. Prices, samples, testimonials. Stamp. Try us for B W N A Wire Netting and Glass Substitute.—Superfelt, Ashwell, Herts.

FOODS.

FOR SALE.

TO IRISH MEMBERS.

The Largest Dealer in First Class Poultry Foods of all descriptions in Ireland. All up to Association Standard. Samples free. —David Freeland, Craigavad, Co. Down.

CARBURY LIMESTONE GRIT

is sharp and clean. 1cwt., 3s. 6d.; 5cwt., 16s.; 10cwt., 30s., f.o.r. Adult or Chick Size. —Carbury and Co., Ltd., Longcliffe Works, Wirksworth, Derbyshire.

SPICK GRIT.

(Registered Trade Mark).

One shell, grit or stone will not give you perfect results. Spick Grit is scientifically blended and will; 8s. cwt., carriage paid, or all corn dealers, in smaller bags. — Liverine, Limited, Grimsby.

A. B. GRIT. SUPERIOR TO OYSTER.

A bright, clean, hard shell grit, perfect shell builder and digestor; none better and none cheaper. Insist on A. B. Grit from your dealer.—Andrews, Leysdown, Isle of Sheppey, Kent.

REDUCED PRICES! GRIT.

Derbyshire Limestone Grit, 3s. cwt; 40s. per ton, f.o.r.—E. Thornhill, Great Longstone, Derbyshire.

MEDICINE.

Gaybird Gapes Preventive, 3s. 6d.; Gapes Powder, 2s. 4d.; Bellows for Blowing Powder, 3s.; Coccidiosis Cure for White Diarrhoea Enteric, 3s. 6d. Descriptive Pamphlet sent free —Carlton Hunting, Gaybird, Limited, Great Missenden, Bucks. Telephone: 58.

Cure Quick prevents and cures White Diarrhoea. Sample, 7½d., or 5s. 6d dozen packets, post paid. Write immediately. Brown and Co., 17, Robinson Street, Hendon, Sunderland. Trade supplied. Write for particulars.

A CERTAIN CURE FOR ROUP IS THE WINNAWAY CURE.

One of many guaranteed testimonials reads:—"'36 birds treated are now perfectly normal, and six extra bad cases are gradually yielding to treatment.

YOUR REMEDY CERTAINLY DOES ALL YOU CLAIM FOR IT."

The simplest, safest, quickest, cheapest cure on the market. No inoculating, no cutting, no squeezing of offensive growths or swellings. Write for my Practical Pamphlet for the practical man (1s. post free).

"THE DETECTION, CURE AND PREVENTION OF ROUP."

Tells you the very thing you want to know, and how to save yourself and your birds from ruin —Severn Storr (Dept. C.), The Winnaway Poultry Farm, Harwell, Steventon, Berks. (When writing mention "Eggs").

WATER RAT

Roup Paste in tubes for the drinking water. Just squeeze a little into the water, and it cures and prevents roup in fowls; also disinfects the water. The birds can get it on an empty stomach. Easy to carry round the farm. All dealers sell 6d. and 1s. 6d. tubes, or four 1s. 6d. direct, post free, 5s. 6d. — Liverine, Limited, Grimsby.

ROUP. ROUP. "DIPTH" (NON-POISONOUS).

(Registered Trade Mark.)

THE NEW AND SURE CURE AND PREVENTIVE
for
ROUP, CHOLERA, DIPHTHERIA, CANKER AND COLDS

in Fowls, Turkeys, Pheasants and Pigeons. No handling of birds necessary, as "Dipth" is simply mixed with meal and fed as a wet mash. Dipth is a quick cure.

THE EDITOR OF "EGGS" HAS READ THE ORIGINAL OF THE FOLLOWING TESTIMONIAL, ALSO OF NUMEROUS OTHERS:—

Dear Sir,—Please send me four more gallons of "Dipth" to B—— — Station. I am pleased to be able to tell you "Dipth" has practically cleared us of roup, which we had in the very worst form. I wish to have more by me in case of any re-appearance. I shall certainly recommend it to any friends interested. Yours truly.—Signed ———.

In sealed tins, carriage paid. Pint 3s.; Quart, 5s. 3d.; ½-Gallon, 9s.; Gallon, 16s.; 2 Gallons, 30s; 4 Gallons, 55s.; 8 Gallons, 105s. From—

**JOHN SMART, S.P.B.A.,
'BONNYBROOK,' SUNBURY-ON-THAMES.**

PUPILS.

Miss Harrison Bell, Sisservernes Farm, Welwyn, Hertfordshire (London, 25 miles). Thorough practical and theoretical training on Pedigree Poultry Farm; up-to-date equipment. Girls taught on business lines. Mammoth and Small Incubators. Lectures, Examination. Post found. Prospectus free.

PUPILS.

Major and Mrs. R. C. Everett, Castel Kingston, Lewes, receive Pupils on t Modern, Progressive Poultry and F Farm. Thorough training in all bran Comfortable home. Charming loca Terms moderate.

Vacancy for Resident Pupil on Mo Commercial Farm of 2,000 stock; excel tuition, and very comfortable h tennis; moderate terms to keen work Apply, Miss Keith, Tangley, Andover.

Mrs. and Mr. R. H. Berney, M.A., Cam S.P.B.A., N.U.P.S., U.D.C., etc., son of late Sir Henry Berney, Bart., receive P for practical and theoretical instructio Poultry Farming. Bee-keeping and B keeping. Salaried posts found. — Common Poultry Farm, Harpenden.

Vacancy, Pupils. All branches tau Incubator capacity, 8,000, rearing Ladies, 20s.; Gentlemen, 25s. week; bo residence; tuition.—Ekins, Grange, Wel borough.

Vacancies, Lady Pupils. Full tuitio branches. Moderate inclusive terms.— Lucas, Stowmarket.

Miss Nicholls (ex-Reading University lege), Elmhurst, Collier Row Village, ford, Essex, has Vacancy for Pupil on Dairy and Poultry Farm. Country dence; 20 acres pasture. Terms, 35s. to per week.

Pupils. A Vacancy occurs for sev Pupils on a Large and Up-to-Date T Poultry Plant, with accommodation 10,000 birds.—Apply, General Manager, operative Poultry Products, Ltd., Virg Water, Surrey.

B-M. POULTRY COURSE

Guarantees that three days' study tea you more than nine out of ten pou keepers ever knew. Chicken Rearin speciality. Saves you 50 per cent in la and feeding, etc. "In these hard ti with high costs for foodstuffs and m able prices for eggs, etc., your course enabled me to come out on the right while many of my neighbours are clo down—down and out." "Your course god-send." "I reared 38 chickens from 48 eggs. The pullets, all reared strictly your lines, averaged 225 eggs." "I am to prove that less than two days' st saved me £18." "I only wish I had kn of your course before, as I should saved quite £200 for a start." Testimon Prospectus, etc., 6d.; special reduced to readers of "Eggs."

**J. BURN-MURDOCH,
F.B.S.A., S.P.B.A., N.U.P.S., C.G.
GREAT SHELFORD, CAMBS.**

EASY WAY TO LEARN POULTR FARMING.

Good Practical Training Offered to or Two Girls; Small Pedigree Fa Vacancy at once; no premium; live 25s. weekly.—Miss Hasler, Frinton-on-Se

PARTNERSHIPS.

Gentleman-Owner, with five acres gr orchard and garden, desires Partner some capital, to start a Commercial Farm in East Sussex; house accomm tion or board-residence.—Write, Box "Eggs," 94, Farncombe Street, Lon S.E.16.

Partner Wanted on a Poultry Farm n Southend-on-Sea, to increase stock; cap £250; every investigation invited In view on farm or in town.—R. A., 39, manton Road, South Croydon.

PARTNERSHIPS.

fficer, with Freehold Property, and
successful Poultry Farm, within 30
London, requires Partner, with
l for further development; practi-
unlimited free range and markets.—
96, "Eggs," 94, Farncombe Street,
n, S.E.16.

ng Lady, ex-student Reading Univer-
College, requires immediately an ex-
iced Partner to help her extend her
e dairy and poultry farm. Small
l required. Ten miles London.—Miss
lls, Elm Hurst, Collier Row Village,
rd. Essex.

MISCELLANEOUS.

il Egg Market, capable of taking all
gs from 2,500 good layers each year;
introduction; price to include good-
nd van, £250.—Box 160, "Eggs," 94,
ombe Street, London, S.E.16.

Sheets Printed Notepaper, Name,
es, and Breed, with Illustrations and
nvelopes. Carriage paid, 10s. 6d. —
rd Thompson, M.S.P.B.A., Strickland-
Kendal.

BEST VEGETABLE PLANTS,
from Sutton's Seeds: Brocoli,
lower, Cabbage and Savoy; 1s. 6d.,
12s., 1,000; carriage paid. — Ellis.
ury, Didcot.

FARMS FOR SALE.

try and Fruit Farm, in Kent.—Par-
rs, Box 138, "Eggs," 94, Farncombe
, London, S.E.16.

ex. Poultry Farm, four acres, free-
excellent housing for 700, brooder
and food store; £600. Appliances and
at mutual valuation. Bungalow
nce for sale or rent. — Box 164,
s," 94, Farncombe Street, London,

olk. 23 acres Freehold. Poultry,
Fruit, Nursery; excellent houses,
ngs, greenhouse; picturesque house,
rooms; inclusive price—Box 200,
," 94, Farncombe Street, London,

hold. Poultry Farm, Somerset; 11
pasture and woodland; double Bun-
, eight rooms; on main road; water
n; one mile station; 400 head Pedi-
stock; well-built poultry houses;
, retiring; £1,120.—Particulars, Box
Eggs," 94, Farncombe Street, London,

Old Sussex Barn, badly converted
cottage. Accommodation comprises
bedrooms, bath-dressing room, two
: rooms, scullery, lavatory, and
same roof extensive garage; stab-
loft; town water; telephone; ideal
ion; high, with fine views; standing
from main road; excellent 'bus ser-
within half-mile Battle Railway
n; market town (weekly), and 5-7
Bexhill and Hastings; good retail
ts; with 10 acres, three grass fields,
garden, cow-house (six), cart-shed,
ous buildings; £1,550.—"P," Black-
Battle.

A BETTER OFFER

at's wanted, hitherto £800 is highest
y house. Freehold Land and Poultry
offered at £1,150. Perhaps the retired
officer living near Cromer would call
— Neville, Thwaite, Aldborough,
k.

FARMS FOR SALE.

Essex and Suffolk Borders. 3½ acres grass land, with army hut, 50ft. x 30ft., on concrete floor, also 60 Young Standard Apple Trees. Land slopes south. Owners moving to larger farm. Price £250, Freehold. —Leigh Brow Poultry Farm, Dedham, Colchester, Essex.

FARM TO BE LET.

To Let, Poultry Farm, six acres, Bedfordshire; utility stock; nice house, eight rooms; main road; near markets; £500 or near.—Box 202, "Eggs," 94, Farncombe Street, London, S.E.16.

COTTAGE FOR SALE.

Suffolk. High healthy, lovely situation, main road; Four-roomed Cottage, brick and slate; five acres good meadow; good outbuildings, splendid water supply; £690, Freehold. £400 can remain. — Box 197, "Eggs," 94, Farncombe Street, London, S.E.16.

HOUSE FOR SALE.

Freehold Six-Roomed House; high position; two acres, gravel soil; good orchard, kitchen garden, tennis court; main water (h. and c.). Suitable for Poultry Farm; five miles Westcliffe-on-Sea. Price £875. —Goble, Thundersley Common, Thundersley, Essex.

LAND FOR SALE.

Four Acres Freehold Land, Sussex, near good markets; road frontage; fenced spring; available for poultry. £200. Box 184, "Eggs," 94, Farncombe Street, London, S.E.16.

Land, suitable for poultry; seven miles, Norwich, three stations; £7 acre, Freehold. Particulars, stamp.—Dare, Horsford, Norwich.

£30 PER ACRE FREEHOLD.

Sixty-five acres (about) of well-wooded Land, with compact Five-Roomed Bungalow for sale, Freehold. Property stands on high ground, half-mile from main Ipswich-Colchester Road, and is approached by a good road. Council certificate for water. Property holds a good number of pheasants, and would make a good game farm. A deep ditch runs almost round the property, which is in one piece and practically a square, and so holds the rabbits, which are plentiful, also pigeons, woodcock, and an occasional stag. Owner is carrying on poultry farming, and, as can be seen, poultry do well, as do fruit and vegetables.—Principals only apply to Box 194, "Eggs," 94, Farncombe Street, London, S.E.16.

SITUATIONS VACANT.

Wanted, immediately, on Small Pedigree Farm, Lady Assistant; live in; services exchange board-lodging.—Rawlinson, Lynwood P.F., Horeham Road, Sussex

Young Man, single, with one years' experience on high-class breeders' farm, seeks Post on Poultry Farm, where scientific methods are applied, and where there is something to learn. Keen, early riser. State wages, etc.—W. H. Green, c/o Rutherford, Swainshill, Hereford.

SITUATIONS VACANT.

Wanted, experienced Poultrywoman, for small Poultry Farm in Sussex; comfortable home.—Particulars and salary to Box 204, "Eggs," 94, Farncombe Street, London, S.E.16.

WANTED.

MISCELLANEOUS.

To Buy or Rent, within easy reach of London, a House, with at least four bedrooms, and about four acres of land, suitable for poultry.—Write, Box 193, "Eggs," 94, Farncombe Street, London, S.E.16.

Wanted, One Dozen Pairs of Iron Wheels for Poultry Houses.—Particulars to The Orchards Poultry Farm, Hadlow, near Tonbridge, Kent.

400 Early W. Leghorn or Wyandotte Pullets.—Corfield, Iver Heath, Bucks.

Poultry and Tame Rabbits Wanted for killing; any quantity; London prices given. — Neville, Thwaite, Aldborough, Norfolk.

Wanted, Light Breed Hens for killing; must be plump, healthy birds.—White, Dept K., The "Eggflo'" Farms, Market Drayton, Salop.

EGGS AND COCKERELS.

If you want a fair price try Haworth Booth, Balcombe, Sussex. Buyer of Poussin and reliable eggs.

SITUATIONS WANTED.

Situation Wanted on Commercial Poultry Farm by Young Gentleman, Public School Boy. Two years' experience as Pupil on large Scottish Pedigree Utility Poultry Farm. Can take charge of Mammoth, Glevum, Hearson and other Incubators. Has knowledge of carpentry, housing, and fencing work; good experience in all routine work, including trapnesting, fattening, day-old chick trade, etc. Further particulars on application to Ian Irwin, Cowden Poultry Farm, Comrie, Perthshire.

Youth, age 19, seeks Position, as Improver on Fruit or Poultry Farm; practical knowledge of pruning, spraying, planting, etc., and commercial egg farming.—Box 203, "Eggs," 94, Farncombe Street, London, S.E.16.

J. Pridham, Stoke St. Mary, Taunton, seeks Post as Working Manager, on Large, Up-to-Date Pedigree Poultry Farm. Qualified in all branches of Utility or Exhibition Poultry. Married. Highest references.

Young Man (21) requires Situation on a Poultry Farm; live in. What offers?—Wilf Wainwright, Vancroft, Hemingfield, near Barnsley.

Gentlewoman, four years' up-to-date experience, desires Re-Engagement on Pedigree Poultry Farm; successful chicken rearer; services given in responsible work for board-residence; secretarial ability; excellent references.—Box 198, "Eggs," 94, Farncombe Street, London, S.E.16.

Judge-Exporter, with life's practical experience and scientific methods, Re-Engagement as manager; could bring big sales.—Box 199, "Eggs," 94, Farncombe Street, London, S.E.16.

Young Man, willing and active, 2½ years' practical experience with poultry, offers services in return for board-residence; good reference, etc.—Box 195, "Eggs," 94, Farncombe Street, London S.E.16.

"A lovely lot of pullets from you, and the best layers I have ever had."
From:—Mr. A. Knowlson,
St. Werbergh, Bristol.

1925 PULLETS
IN
RHODE I. REDS (Boucher direct).
WHITE LEGHORNS (Ransford x F. Snowden, both direct).
BLACK LEGHORNS (Birkhead direct),
From Trap-nested and Blood-tested Stock.
No Roup on This Farm. No. B.W.D.
Laying Tests Records include two 1st's and one 2nd to date.

"I am so pleased with stock—we have never had many eggs in winter before.
From:—Mrs. Esplin,
Inchture, N.B.

Mrs. ATHOL STUART, S.P.B.A., BOXMOOR, HERT

BENNET & PIKE

WHITE WYANDOTTES

4-MONTHS OLD PULLETS
On Approval
Carriage Paid
FROM **8/6** EACH
5°/o Reduction
on Quantit'es

WHITE LEGHORNS

BREEDERS of PEDIGREE POULTRY · ASHEY, I.O.W

FORTHCOMING EVENTS.

"GREAT YORKSHIRE"

SHOW AT BRADFORD

JULY 22nd, 23rd, 24th, 1925.

Entries Close for Poultry and Pigeons, July 4th.

Poultry—Total Prizes £193 11s. 0d.
Pigeons—Total Prizes £74 0s. 6d.

Schedules and Entry Forms from
A. S. CAVERS, *Secretary.*
3, BLAKE STREET, YORK.

ROYAL LANCASHIRE SHOW
AT

LANCASTER

July 30, 31, August 1 & 3.

77 Classes for Fancy Poultry (Under Poultry Club Rules). 18 Classes for Utility Poultry (Birds hatched in 1925). 43 Classes for Pigeons (under N.P.A. Rules).
16 Specialist Judges.
Penning and Feeding by Old Calabar.

Entries close July 1,

For Schedules, apply (stating Section) to R. Chawner, Derby House, Preston.
Telegrams: "Deorlancs," Preston.

When Answering Advertisements, Please Mention "EGGS."

FORTHCOMING EVENT

MIDLAND AGRICULTURAL AND DAIRY COLLEGE.

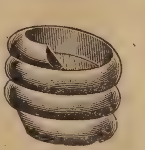
The following Courses in Poultry-Keeping will commence at the above College on SEPTEMBER 29th, 1925:—
Certificate Course ... ... 12 weeks.
Diploma Course ... ... 1 year.

For Prospectus, apply The Principal, Sutton Bonington, Loughborough.

WHITE WYANDOTTES?
Then get them from
J. H. McINNES SKINNER
(M.S.P.B.A.),
BRAMERTON GRANGE, NORWICH

THREE MONTHS OLD PULLETS & STOCK COCKERELS, from **8s. 6d.** and **10s. 6d.** respectively. Delivery of Pullets June and July. Cockerels, May to July. Book your requirements NOW. All from fully trap-nested, thoroughly sound reliable stock of great stamina, combining LARGE EGG laying capacity with heavy Winter Egg Production. Full Particulars by return.
Satisfaction Absolutely Certain.

SPIRAL RINGS,
In Twelve Bright Colours.



No. 5-6 for Light Breeds: 1s. 9d., 50; 3s. 3d., 100.
Heavy Breeds: 1s., 25; 2s., 50; 3s. 9d., 100.
Also Adjustable Aluminium and Flat Band Rings.
Prices and Catalogue on application.

A. T. HOWELL, M.S.P.B.A.,
SILVER HOW, MILL LANE, TEIGNMOUTH

Meat Meal 15/6

56 per cent. Albuminoids.

cwt.
Meat and Bone Meal ... ...
Fish Meal ... ...
Laying Mash (Newman's) ... ...
Growing Mash ,, ...
Chick Mash ,, ...
Kibbled Maize ... ...
Wheat, English ... ...
Wheat, Canadian Feed ... ...
Wheat Points ... ...
Oats (English or Canadian) ...
Barley Meal ... ...
Maize Meal ... ...
Soya Bean Meal ... ...
S.G. Oats ... ...
Sharps (Good) ... ...
White Middlings ... ...
Broad Bran ... ...
Ordinary Bran ... ...

Carriage Paid 5 cwt. lots (mixed otherwise), Midlands, South and So West. Bags Free, Weighed Gr Less 4d. in the £ cash with order, 10s. per ton two-ton lots.

FRANK SHEARN & CO., LT
MIDSOMER NORTON, SOM.
'Phone 51.

" POULTRY FOODS AND FEEDI
ALSO
" CHICKEN BREEDING,"
BY
TOM NEWMAN, Rudgwick,
Price 6½d. each, Post Free.

UNEXTRACTED

Dried Yeast

5% Oil. 45% Protein. 36% Carbohydrates.

Price 27/6 per cwt.

Yestos

THE VITAMINE MEAL.

5% Oil. 55% Protein. 15% Carbohydrates.

Price 26/- per cwt.

Sussex Ground Oats

(no admixture whatever).

Price 17/- per cwt.

Poultry Meal

(Mr. Newman's formula).

3% Oil. 15% Protein.

Price 16/- per cwt.

All the above foods are of the finest quality, made from the soundest ingredients, and are the best procurable — further, they are ENGLISH.

PURE

Alfalfa Meal

(ground in England).

Price 16/- per cwt.

All the above prices carriage paid to the nearest Station, England and Wales.

A discount of 5% to members of S.P.B.A. if ordered through the Association.

FOR SAMPLES AND PARTICULARS APPLY:—

The English Grains Co., Ltd.,
Shobnall Road,
BURTON-ON-TRENT.

The secret of successful Caponising lies mainly in the Instruments. Use

CAPONETTES

The Instruments without a flaw!

NOW IS THE TIME to get those late-hatched Cockerels ready for a profitable market. Caponise them, and turn them into real good food, fit for the epicure, by increasing their succulent meat and reducing their fibre.

The use of CAPONETTES will enable any poultryman to Caponise his Cockerels with complete success, and so increase his profits.

OWING TO IMPROVED MANUFACTURING FACILITIES we are now able to offer these instruments at a considerably reduced price, and, for a limited period only,

we are selling
THE COMPLETE CAPONETTE SET FOR **10/6**

Full instructions with every box.

Personal demonstration arranged if desired.

ALBERT H. BRAIN,
63, OLD MEETING STREET, WEST BROMWICH.

Let the 'VISOL' Method

definitely prevent and cure

ROUP, AVIAN DIPHTHERIA,

AND KINDRED AILMENTS IN YOUR FLOCK.

A premium of only one penny per day per hundred birds will afford you the FINEST INSURANCE against these dread diseases and ensure you positive protection. So convinced are the makers of the efficacy of VISOL, no matter how severe the attack may be, that THEY GUARANTEE THAT IF THE VISOL TREATMENT IS CAREFULLY FOLLOWED A COMPLETE, POSITIVE CURE will be achieved, with the minimum of expense and trouble, and in rapid time.

READ WHAT MR. JOHN H. DOWDEN, the famous breeder, of Heathfield, Sussex, says about VISOL:—

> "John H. Dowden & Son find that by the occasional use of VISOL, that dreaded disease roup has never yet been known to gain a footing amongst their flocks. They believe that prevention is better than cure."

WHY NOT TEST IT? It is the scientific discovery of a well-known specialist, and represents years of investigation and research.

IN STONE JARS—Quart, 4/-; ½ gal., 7/-; gal., 12/6.

AGENTS WANTED.

A few expert Poultry Farmers are required, in each County, to undertake the representation of VISOL. Write for details of inviting agency terms.

The Visol Laboratories,
63, OLD MEETING STREET, WEST BROMWICH.

WILLIAM COOK & SONS,

England's Premier Laying Strain Specialists & The Originators of the Orpington Fowls and Duck

advise all readers of "Eggs" who require Early 1925 Stock for breeding purposes next season to secure these now, for as this has n been a good rearing year there will not be an unlimited number available when the Autumn is reached.

Although no priced offers have hitherto been made of stock by William Cook and Sons, they have already disposed of some hundreds their January and February (1924) hens to regular purchasers who have proved the advantage of breeding from birds which represe careful selective production year after year.

All the birds quoted for below have been bred from the strains which have made William Cook and Sons' Stock popular in every countr

It will be a definite advantage to every one who has a few early 1925 Cockerels coming along now to secure a pen or two of good he of the breeds they keep as the birds will then become acclimatised before the next rearing season is here, and the prices are more favourab than they will be in September next. **They now offer—**

IDEAL WHITE LEGHORNS.—January and February, 1924, hens from Class I. matings, **12/6** each; Class II. **15/-** each; a Class III. **£1** each.

Entirely unrelated January, 1924, cocks bred from 281-289 egg hens, mated to cocks from 292-294 egg hens, **21/-** each.

January, 1925, pullets ... ... **18/- & 21/-** each. March, 1925, pullets ... ... **14/-** eac
February, 1925, pullets ... ... **16/-** each. 3 months pullets ... ... **12/6** eac
All Class III. birds.

A limited number of January, 1925, Cockerels bred from the same hens as above cocks, **25/-** each. February birds, **21/-**. March birds, **15/**

PREMIER BLACK LEGHORNS.—January and February, 1924, hens from Class II. matings, **12/6** each. Class III. birds, **15/-** eac

A few good unrelated 1924 cocks, **18/-** and **21/-** each.

January, 1925, pullets ... ... **21/-** each. 3 months pullets ... ... **12/6** eac
February, 1925, pullets ... ... **18/-** each. Excellent January Cockerels ... ... **25/- & 30/-** eac
March, 1925, pullets ... ... **15/-** each. Early February birds ... ... **21/- & 18/-** eac
Early March Cockerels ... ... **15/-** each.

CHALLENGE WHITE WYANDOTTES.—A limited number of good 1923 hens, **10/6** each. January and February, 1924, fro Class II. stock, **15/-** each. From Class III. matings, **£1** each. Unrelated early 1924 Cocks, **15/-** and **21/-** each upwards.

Early January, 1925, pullets ... ... **25/-** each. Early February, 1925, pullets ... ... **21/-** eac
Early March, 1925, pullets ... ... **15/-** each.

Magnificent January 3rd Cockerels, combining grand type, colour, size and bone, with proved laying propensities through mar generations, **35/-** and **42/-** each.

February birds ... ... **35/- & 30/-** each. Early March birds ... ... **21/-** eac

RHODE ISLAND REDS.—The fine stocks of this breed built up by William Cook and Sons have been responsible for giving pleasu to a great many poultry breeders on account of their outstanding colour and type—while their yield of good coloured, large-sized eggs h increased the yearly revenue on poultry farms in all parts of the country.

There are a number of well-known farms at the present time where none but William Cook and Sons' strains are bred—the owne of these having proved that the St. Mary Cray birds possess remarkable stamina, in addition to appealing to the eye of all their visito and prospective customers.

A few good 1923 hens are to be purchased during June at **12/6** each.

Early 1924 hens ... ... **18/- & 21/-** each. Early January, 1925, pullets ... ... **25/- & 30/-** eac
Early February, 1925, pullets ... ... **21/-** each.

A few younger pullets will be available before the end of June at **18/-** each.

Exceptionally fine February, 1924, Cocks, **30/-**, **35/-** and **42/-** each. Several birds of good type and colour—not quite as outstandi in size—at **25/-** each.

A limited number of early January Cockerels, **30/-**, **35/-** and **42/-** each. Younger birds will be quoted for on receipt of a note customers' requirements.

RED SUSSEX.—William Cook and Sons having recognised the advantage of combining this favourite coloured plumage with t hardiness and table propensities of the Sussex fowl, have been breeding some flocks of typical birds from the finest strains and ha now to offer:—

1924 Hens of outstanding quality, **21/-**, **25/-** and **30/-** each.

1924 Cocks from guaranteed distinct and unrelated strains, **25/-**, **30/-**, **35/-** and **42/-** each. January, 1925, Cockerels, **30/-**, **35/-** ar **42/-** each, and early February birds, **25/-**. A few grand early hatched Pullets, **25/-** and **30/-** each.

BASKET DEPOSITS.—Each order for a pen of birds must be accompanied by an additional remittance of **12/6**, or for six pulle **10/-**. Where 18 or 20 pullets are ordered the deposit is **£1**, and single male birds are sent in boxes at **2/6** or baskets at **7/6**, and the amounts are returned on the day the empty is received at St. Mary Cray.

Further offers next week of Light Sussex, Buff and White Orpingtons.

Inspection of farm cordially invited every week-day. St. Mary Cray is only 14 miles from London (Victoria, Holborn and St. Paul's Southern Railway, S.E. and C.R. Section. The old firm have only one address, viz.:—

ST. MARY CRAY, KENT.

No business whatever transacted on Sundays, but farm is open all Saturday. **Telephone:—ORPINGTON 7.**

Those Poultry-keepers who want to see the largest and most modern poultry farm in England should visit St. Mary Cray any week-da just ringing up and advising the train and a conveyance will be sent to the station.

Readers of "Eggs" are invited to apply for free Treatise on Feeding and Management of Birds of All Ages.

w of an Avenue of Breeding Pens, Eaglesfield Poultry Farm.

RHODE ISLAND REDS. WHITE LEGHORNS.
WHITE WYANDOTTES. LIGHT SUSSEX.

Twelve Gold Medals and First Prizes won with my strains in open British and American International Laying Trials, including highest official R.I. Red pens and six months' winter record Harper-Adams', 1921, six birds laying 1,324 eggs in 48 weeks (2,838 oz.). No British Pen Has Ever Equalled This Twelve or Six Months' Winter Record. Money value £16 6s. 3d.

Winners 1st Prize and Gold Medal and Cup Lancashire International Laying Trials, 1922-23 (large breeders), beating all breeds, including all White Leghorns and White Wyandottes. Money value £19 0s. 11½d. for 10 birds. NOTE these remarkable facts: Not a single bird broody during the trials. Total number of Eggs, 2,219. Total weight, 4,722 oz. This is the best official record ever made in this country for a pen of 10 birds.

Magnificent Selection Now Ready.

3 Months Old Pullets and Cockerels.

Prices: 12/6, 15/-, 21/-, 30/-, and 2 Gns. each. **Special Offer.**—A limited number slightly mis-marked early RI. Red Pullets, specially suitable for winter egg production. Subject to being unsold, 12/- each. I make a speciality of small select Foundation Breeding Pens, carefully mated, for those starting and desirous of building up a high-grade flock.

pecial attention is drawn to the system that has **always** been practised throughout this entire poultry farm (now covering about 25 acres). ot only has stock in the **highest breeding state** been reserved for breeding year by year, but this same breeding and laying stock has lways been maintained under **ideal breeding conditions** for the encouragement of **stamina** and **vitality** and as a result freedom from isease. All breeding pens are planned so as to contain **not more than 12 birds**, on large grass runs which are never allowed to become are. All stock are further **hatched and reared** exclusively on the **small unit system** and the class of birds now offered can do nothing but nspire absolute confidence. They are unique in that they are not only bred for vitality but kept under conditions which never impair it.

W. M. GOLDEN, Eaglesfield Poultry Farm, LEIRE, RUGBY.

WIRE NETTING
PATENT DEAD FLAT

B·W·N

Best English. Best and highly galvanised, and every roll warranted 50yds., 6ft. 6in. All widths and Gauges guaranteed. Beware of inferior wires Full Price List on application.

OAK STAKES
LAST A LIFETIME

Lengths, 4ft. 6in. to 8ft. 2¾ x 1¼in. to 3x1½in. square, sawn straight, ready pointed, from 7/6 per dozen. Special Low Prices for truck loads or quantities. Also Oak Poultry Gates, 7/6 each. **Poultry Houses. All Poultry Appliances.**

GOLDEN'S TRAP-NESTS.

Send for illustrations, My original 1914 patent that has made practically every other type of Trap-Nest obsolete; made to fit existing nests, 500 in use on my farm; price 3/- each, 12 for 33/-; sample by post, 3/9. **Record Sheets** supplied, unique and easy system; price 1/2 per set, to last pen 12 months.

Testimonial.—"We have four kinds of Trap-Nest Fronts, and yours whack the lot, both as regards workmanship, and also as being more reliable in action.—R. Jones and Sons, 17, Cannon Street, Aberdare."

W. M. GOLDEN, Patent Appliance Works, LEIRE, RUGBY.

When Answering Advertisements, Please Mention "EGGS."

When you want UVECO POULTRY FOOD (and you will always need it if you want the maximum egg supply) ask for it like this:

"I want a bag of U.P.F. please"

Don't accept plain "UVECO," which is NOT U.P.F., but is purely a flaked maize food for cattle and is quite unsuitable for poultry. Be careful to accept nothing but

U.P.F

Short for "Uveco Poultry Food"

Sample and Literature free

UVECO CEREALS LTD., Cunard Building, LIVERPOOL

THE MOST VALUABLE BOOK FOR BREEDERS EVER PUBLISHED.

he Inheritance of Fecundity in Fowls.
By Oscar Smart.

Of all Booksellers, 5/- nett, or Post Free from the Publishers for 5/6. Published by
The City and South London Printing and Publishing C
(T.U.), 94, Farncambe Street, London, S.E.16.

TAKE YOUR EGGS TO MARKET IN "S.E.P.A.D." (IRON BOUND) EGG BOXES.

15 Doz. Size, 4/6.

30 Doz. Size, 6/6.

Complete with cardboard fillers and flats. Special grip lid fastening. Boxes stained light yellow; marked "EGGS." Felts between layers at 1/- extra 15 doz. box: 2/- extra 30 doz. box. Name and Address stencilled on lid at ½d. per letter. Extra sets Cardboard Fillers at 1/6 per 10, post free.

THE FOLLOWING PRICES ARE ROCK BOTTOM — EVERYTHING BRITISH MADE:—

CREOSOTE

(Refined Fluid).
NUT BROWN.
10 gallon drum 11½d. gallon.
44 gallon barrel 10¾d. gallon.

REFINED TAR.

10 gallon drum 10½d. gallon.
44 gallon barrel 9¾d. gallon.
Deposit 10/- drum or barrel, returnable within two months.

TRAPNESTS.

We are supplying the following;
"WELWYN" (WELL IN),
"VITA" (ALL METAL),
"PERFECTION" (GOLDEN),
"ADAMS" (SILENT).

We are quoting very keen prices for 50 and 100 lots. You will save money in writing us your requirements.

SPIRAL RINGS

for LEGHORNS, R.I.R.s, etc.
100, 3/-; 150, 4/2; 300, 8/-.
In Bright Colours.
Also Flat Bands and Numbered Aluminium. All post free.
Very low prices for 1,000 lots.

EGG FILLERS.

(WITH FLATS).
(Hold 3 Doz.)
1 gross 18/3; 5 gross, £4 8s. 6d.; 10 gross, £8 15s. 6d.
All Carriage Paid.
Cardboard Egg Boxes (1 Doz.), 10d. per Doz.; 9/6 Gross.

TERMS—
CASH WITH ORDER.

'Phone:
HADLEIGH 75.

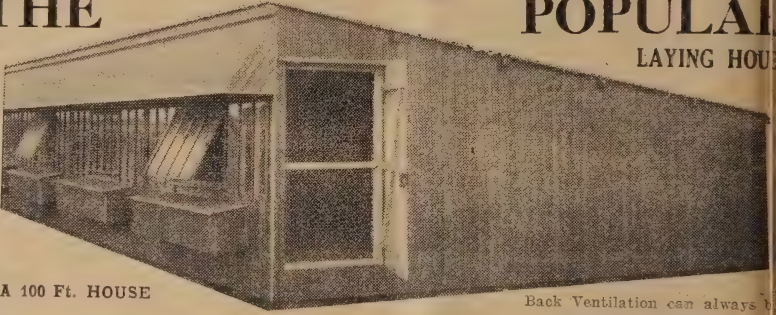
SOUTH ESSEX POULTRY APPLIANCE DEPOT, Hadleigh, ESSEX.
(C. J. Coverly—J. Y. Stewart, M.S.P.B.A.).

YOU MUST GO TO HANNAFORD FOR REAL VALUE

IT WILL ALSO
PAY YOU
TO GET HIS LATEST
1925 LIST
NOW READY.

THERE IS REAL VALUE IN IT.

THE POPULA
LAYING HOU



THIS PHOTOGRAPH IS A PORTION OF A 100 Ft. HOUSE RECENTLY ERECTED.

Back Ventilation can always b added when required.

THE SALE OF THIS HOUSE IS GROWING BY LEAPS AND BOUNDS, FOR THE SIMPLE REASON CLIENTS KNOW AND ARE HEARIN FROM FRIENDS OF THE WONDERFUL VALUE I SEND OUT.

This popular house is sent out complete with best galv. iron Dry Mash Hoppers, Top-fill Water Fountains, Drop Board, Perches, Glass, Nest Boxes, best Bitumen Felt on roof, 5ft extension in the 16 x 10 ho and up, ex wire door also in larger houses. houses a also per trased outside.

No 1.	6 x 10 x 5 ft. back x 7ft. front	£14 15 0	Floor and Sleepers	£2 5 0	Complete	£16 15 0
2.	10 x 10 x 5 ft. ,, x 7ft. ,,	£19 5 0	,, ,,	£3 18 0	,,	£23 0 0
3.	16 x 10 x 5 ft. ,, x 7ft. ,,	£29 17 0	,, ,,	£5 3 0	,,	£34 10 0
4.	20 x 16 x 4½ft. ,, x 7ft. ,,	£44 4 0	,, ,,	£10 14 0	,,	£54 8 0
5.	30 x 16 x 4½ft. ,, x 7ft. ,,	£60 10 0	,, ,,	£15 15 0	,,	£76 0 0
6.	40 x 16 x 4½ft. ,, x 7ft. ,,	£80 0 0	,, Carr. ,,	£20 16 0	,,	£100 0 0
7.	50 x 16 x 4½ft. ,, x 7ft. ,,	£99 19 0	,, ,,	£25 17 0	,,	£125 0 0
8.	60 x 16 x 4½ft. ,, x 7ft. ,,	£119 10 0	Paid. ,,	£30 18 0	,,	£150 0 0
9.	70 x 16 x 4½ft. ,, x 7ft. ,,	£139 0 0	,, ,,	£35 19 0	,,	£174 0 0
10.	80 x 16 x 4½ft ,, x 7ft. ,,	£168 10 0	,, ,,	£41 0 0	,,	£199 0 0
11.	90 x 16 x 4½ft. ,, x 7ft. ,,	£177 0 0	,, ,,	£46 1 0	,,	£222 10 0
12.	100 x 16 x 4½ft. ,, x 7ft. ,,	£196 0 0	,, ,,	£51 2 0	,,	£246 0 0
13.	120 x 16 x 4½ft. ,, x 7ft. ,,	£234 0 0	,, ,,	£61 4 0	,,	£294 0 0

SEND FOR MY FULL LIST OF OTHER HOUSES, FOUNTAINS, HOPPERS, Etc., BEFORE MAKING YOUR PURCHASES. SPECIAL DISCOUNT MEMBERS S.P.B.A.

C. A. SYDENHAM HANNAFORD, HAMWORTHY JUNCTION, DORSET.

Special Bargain Offer to our customers. 500 Collapsible Chicken Runs, ¾in. mesh, 6ft. x 3ft. x 2ft., with end door, and stakes for fixing. Complete, 15/- each. Carriage paid. List price 17/6 each.

Best Galvanised Wire Netting.

All guaranteed full weight and length (50 yard rolls).

Carriage paid on six rolls.

	1ft.	2ft.	3ft.	4ft.	5ft.	6ft.
3in. mesh 19 gauge	3/-	5/6	7/7	10/1	12/7	15/1
2in. mesh 19 gauge	4/2	7/7	10/5	13/10	17/4	20/10
1in. mesh 20 gauge	6/10	12/6	17/10	23/8	—	—

Special Free Gift to purchasers of six rolls or more at one time until this advt. is withdrawn. One sample Collapsible Chicken Run, 3 ft. size. Carriage Paid. Quote Chicken Run when ordering.
LISTS FREE.

MESSRS. WICKS,
60, ROSE LANE, NORWICH.

LAYING MEAL.

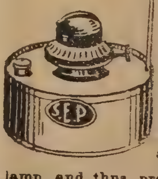
Newman's Winter Formula.
Finest Ingredients Used.

per 13/- *cwt.*

Free on Rail or ex Warehouse,
STONE & NEWPORT (SALOP).
Poultry and Chick Foods in Stock.
6d. per cwt. less in 5 cwt. lots upwards.
5 per cent. discount on orders received through S.P.B.A.

STUBBS & Co., Ltd.,
(Corn Merchants and Millers),
STONE, Staffs,

Porter's "Aqueduct" (Prov. Pat. No. 2963
Brooder or Incubator Lamp.



Specially designed t eliminate the dange of overheating. It i fitted with a receptacl for water, and when i brooder purifies an moistens the air whicl is essential to the production of health chicks The water protects the oil containe from overheating. als fitted with safety ai shaft and vent, thereb a current of air passes through the body o lamp, and thus prevent the oil vapourising and firing. With Chimneyless Burne and Patent Wick. ⅝in., 5/3; 1in., 6/-. Wire Guards, 1/-. Postage, 6d. Apply for Poultry Appliance List.

S. E. PORTER, LTD., Makers, WHITCHURCH, SALOP

CAMLIN CURES **GAPES**

3/6 and 2/3 per tin, post paid.
Metal Bellows for Camlin 5/9 per pair.
Rubber Distributors 3/6 each.

IN GAME & POULTRY.

Insect Powder, per large tin 3/3, postage paid.

'e had some! Order to-day. **GILBERTSON & PAGE, Ltd., 19. Amworth, Hertford, Herts.**

ECIAL OFFER for next twelve weeks:—
TTINGS AND DAY-OLDS from my healthy breeds at Reduced
ices. Send for particulars.
otations for lots of 100 and over and
three and four month old
llets and
kerels.

JOHN MEEKINGS,

PEANS FARM, ROBERTSBRIDGE, SUSSEX.

Tel.: ROBERTSBRIDGE 11.

BLACK MINORCAS.
LIGHT SUSSEX. WHITE LEGHORNS.
BARRED ROCKS (Canadian).
RHODE ISLAND REDS.

INEST DEODORISER AND INSECT
VENTOR FOR POULTRY & PIGEONS.

CEDAR LITTER.

per large sack, Carriage Paid.

Purley Poultry Farm, Ltd.
OLD LODGE LANE, PURLEY.

---

s. Alec Wilson

OFFERS
LITY WHITE WYANDOTTE
PEDIGREE
1924 BREEDING HENS.
10/6 & 12/6.

nt positions in Trials:—
Harper-Adams S. Pen.
Harper-Adams Flock.
d Northern Flock.
Lancs. Flock.
Yorks. Flock.

RTH WYANDOTTE FARM,
GARTH, BRECONSHIRE.

---

gree Stock Cockerels and Pullets.
ite Leghorns. White Wyandottes.
S.c. R.I. Reds. Light Sussex.
now booking orders for this season's
ee Stock Cockerels, Dec., Jan., and
atched. For delivery now or in the
n. Full pedigrees supplied on appli-
I guarantee them all sound and
y, and typical of their breed. Satis-
guaranteed. Seven days' approval.
ge Paid. — LINDSAY SCOTT,
.P.S., S.P.B.A.), The Worlington
y Farm, Mildenhall, Suffolk.

Miss COLLCUTT, Partner for many years of the late

DR. J. H. BALDWIN.

The whole of the valuable stock which has made this Farm so famous has been retained, and the breeding will be continued on the same lines, with the usual strict selection as formerly.

White Leghorns, White Wyandottes, Rhode Island Reds (s.c.)

Trap-nested all the year.

Bred entirely from TESTED PARENTS.

NOW BOOKING, SIX MONTHS' COCKERELS £1 1s. each
THREE MONTHS OLD PULLETS 12/6 each.

SPRINGFIELD POULTRY FARM, WIMBORNE.

Telephone: WIMBORNE 21. Telegraph: "COLLCUTT, WIMBORNE."

J. H. THOMPSON,
P.C., N.U.P.S., S.P.B.A.,
EDGEWOOD POULTRY FARM,
FOUR MARKS, HANTS.

Present Position Hants Test, 4th Wyandottes, 7th month; National, 6th month; 2nd Anconas only seven 2nd Grade Eggs to date.
Three-month-old Pullets from 10/6.
Delivery May Onwards.

THE
S.P.B.A., BADGE.
Gold Letters on Blue Enamel.
1/- post free.

TOM NEWMAN,
The Beeches, Rudgwick,
HORSHAM, SUSSEX.

E. Bostock Smith
Pedigree Utility Poultry

If you would like some of my own Breeding Birds

Write to me now.

"Heaselands," Barham, Canterbury, Kent.

YOUNG STOCK,
1925.

PULLETS booked for delivery from three months old. Prices from 9s each Subject to Discounts.

COCKERELS booked from the same age. Prices based on Autumn Quotations, less 50 per cent, May and June Delivery.

Special Discounts to Commercial Egg Farmers requiring Quantities of Breeding Males.

W. Leghorns.
R.I. Reds.
W. Wyandottes.
Speckled Sussex.

THE · LONG · DISTANCE · LAYERS
Leslie Pattison
WESTON COYNEY HALL LONGTON STAFFS

THE WORLD'S LEADING UTILITY STRAINS OF ABACOT RANGER, BUFF ORPINGTON, COALEY FAWN, INDI RUNNER AND KHAKI-CAMPBELL DUCKS AND S.C. RHODE ISLAND REDS, FROM WHICH MY CLIENTS HA REPORTED YEARLY AVERAGES UP TO 304 EGGS PER BIRD. SITTINGS (15 N.R.), ACCORDING TO BREED OR PE FROM 10s. to £3 3s. DAY-OLDS, 21s. to £4 4s. PER DOZEN. MY FORTY PAGE "BOOK OF THE LAYING DUCK AN HEN," BEAUTIFULLY ILLUSTRATED, FREE ON APPLICATION.—A. HAROLD PAINE (MEMBER OF THE LEADI POULTRY AND DUCK CLUBS), THE CHALET, BURGESS HILL, SUSSEX, and BROWN EGG FARM, ROTTINGDEAN, SUSSE

SONIMOR
(WHITE LEGHORN)

THE LARGEST ONE BREED FARM ON EARTH
OR AS FAR AS WE KNOW ANYWHERE ELSE

OW is the time to book your orders for High-irade Stock Birds to replenish your Breeding 'ens for Next Year. By LOOKING AHEAD you VOID the USUAL disappointment experienced y the "any-time-will-do-man," who has to be ontent with "ANY OLD THING" in the end y Booking now you can have the pick of the took You can by mutual arrangement defer ctual delivery until such time as you are ready or the birds. I will soon be having for disposal everal thousands of my best 1925 Breeders. All he birds I will offer have been carefully selected or their past records, stamina, and superb body haracteristics. My "In Loco Parentis" Hot Vater Brooder and "Simplicists" Trap-nests ead the way in reliability of action and simplicity of handling.

My Book, "EGG-IN-KUMS," is the faithful councillor of the Ambitious Poultry Farmer (50 Explanatory Photos). Price 4s.

OUR POPULAR PRICE LIST
AND OTHER PARTICULARS
COST NOTHING

POULTRY FARM
LECKHAMPSTEAD, NEWBURY, BERKS.

Tarred Roofs soon wear out

They don't last like Pluvex, the best roofing for all your small buildings. Pluvex is clean to handle and a pleasure to lay and for years it keeps on keeping out the weather. It does not need tarring or painting. In rolls of 12 sq. yards from your Hardware or Builders' Merchant at 5/9 per roll. Heavy Grade, 8/6.

PLUVEX *ROOF FELT*

FREE.—*Samples and booklet on request.*

The RUBEROID Co. Ltd Sole Manufacturers,
71 Lincoln House, High Holborn, London, W.C.1.

Dried Milk

45/- per cwt.; 13/6 per 28lbs.
25/- ,, 56lbs.; 5/6 ,, 10½lbs.
(Post free.)
All Carriage Paid U.K.

Unextracted Dried Yeast

27/- per cwt.
14/6 per 56 lbs.
F.O.R. Greenock.

See "Eggs" of 22-4-25 for full range of goods and prices.

Current Price List on Applicatio

MACFARLAN, SHEARER & CO.,
Dept. A., GREENOCK.

There are many Dried Bloods offeri for Pigs and Poultry, but only o

RENTOX.

Blood requires special and costly pr paration if it is to be used as a foo Full particulars on request.
MIDLAND CATTLE PRODUCTS, Lt
BORDESLEY STREET,
BIRMINGHAM

When Answering Advertisements, Pl Mention "EGGS."

THE SCIENTIFIC POULTRY BREEDERS'
FARM ACCOUNT BOOK
Compiled by ALFRED BROWN Esq.

PRICE:
POST 6/- FREE

Published and Sold by the S.P.B.A., Rudgwick, Horsham, Sussex.

TIMBER

New Shipments every week during Summer

IF YOU WANT

- RUBBISH THAT LOOKS CHEAP (on paper). Don't waste time writing to me
- A DEAL ON THE SQUARE, I'm pleased to do business with you.
- SOUND, SQUARE GOODS at a fair price. Send your order.

Any special design can be machined to your requirements.

ORDERS £1 AND UP CARRIAGE PAID—ENGLAND, WALES AND CHANNEL ISLANDS.

Special Cheap Offer of Guaranteed Sound **NEW TIMBER.**

Matching, P.T.G.

$\frac{5}{8}$ x 5 **7/6** per 100 ft.

$\frac{5}{8}$ x 5$\frac{1}{2}$ **8/9** ,,

Quality! Quality! and Quick Delivery!

BATTENS.

$\frac{1}{2}$ x 2	Per 100 ft.	**2/3**
1 x 1	,,	**2/0**
$\frac{5}{8}$ x 2	,,	**2/9**
$\frac{3}{4}$ x 2	,,	**3/4**
2 x 1	,,	**3/6**
1$\frac{1}{2}$ x 1$\frac{1}{2}$	,,	**4/9**
2 x 1$\frac{1}{2}$	,,	**5/9**
2 x 2	,,	**7/9**
2 x 3	,,	**12/6**

MATCHINGS.

$\frac{1}{2}$ x 4	**5/3**
$\frac{1}{2}$ x 5	**6/9**
$\frac{1}{2}$ x 6	**8/0**
$\frac{3}{4}$ x 4	**7/0**
$\frac{3}{4}$ x 5	**9/0**
$\frac{3}{4}$ x 6	**11/0**

FLOORINGS.

1 x 5, T.G. ...	**12/0**
$\frac{7}{8}$ x 6, T.G. ...	**12/0**

WEATHERBOARDS.

6in., **8/0.**

7in., planed, **10/0.**

6in., planed and rebated, **9/0.**

SAWN BOARDS.

$\frac{1}{2}$ x 6	**7/6**
$\frac{3}{4}$ x 6, planed ...	**10/6**

PLYWOOD.

15/0 per 100 sq. ft.

LATHS, 4/6 bundle.

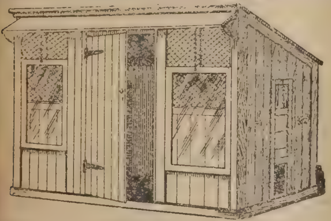
FELT, 5/0 15 yards.

SASH BARS, SASH RAILS, Etc., ALWAYS IN STOCK.

MAHOGANY PLYWOOD, 24/- 100 sq. ft.

FLEETWOOD JONES, S.P.B.A.,
Park Wharf, Evelyn Street, Deptford, London, S.E.8.

☛ THE ONLY TIMBER MERCHANT WHO GUARANTEES EVERY FOOT SOUND OR MONEY REFUNDED.



HIGH CLASS GOODS—THE PREMIER No. 1.

DETAILS:—A really high-class house. Constructed of $\frac{5}{8}$in Tongued, Grooved and V-jointed matching on 2in. x 1$\frac{1}{2}$in. Framing. 2 Glass Windows, Perches, Lock, Key, Projecting Hood, Roof covered with "Pluvex," Bolts for erecting, and including Floor, all complete as illustrated.

Size 6 ft. x 4 ft. x 4 ft. ... **£3 19s. 6d.** Carriage Paid.

FULL LIST POST FREE.

A. J. HEINZE, S.P.B.A., F.R.H.S., 82, Southgate Rd., London, N.1.

Breeders of:—
RHODE ISLAND REDS.
WHITE BRESSE.
WHITE LEGHORNS.
BLACK LEGHORNS.

Newman & Norwood,

The Beeches,
Rudgwick,
Sussex.

Swan Hill P. F.,
Ropley,
Winchester.

PULLETS.
COCKERELS.
HENS.

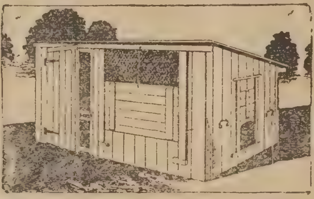
HEBDITCHS'
ARE THE BEST—ALWAYS

Whether it be an Incubator, Foster Mother, just an ordinary six-by-four Poultry House or a large two-or-three-hundred-foot Intensive House, HEBDITCH-designed and HEBDITCH-made Appliances are so vastly superior that it will be to your real interest to get Your Entire Outfit from HEBDITCH. Send for the Illustrated FREE CATALOGUE. It tells you all about these splendid Appliances.

The "DREADNOUGHT"
POULTRY HOUSE.

Made of best ⅝in. Red Deal boards, V-jointed, tongued and grooved. Strong door, hung with stout hinges, and fitted with press-lock and key. Up-and-down sliding shutter, suspended on a strong chain. Handles for lifting. Two strong perches. Everything necessary for erecting. Sent out in sections ready for putting up.

An Ideal House for Growing Chickens.



Size—6ft. long, 4ft. wide, 4ft. high.

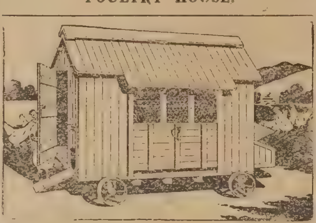
Price £2 6 0.

Three for £6 13s. 6d.
Six for £13 2s. 6d.
Twelve for £26.
Floors, 13/- each extra.

Carriage paid in England and Wales. Prompt despatch.

If pickled with Preserolium, the cost is 1/- in the £ extra.

The "MEADOW"
POULTRY HOUSE.



A most useful House for Farm and Field use. It is made of ⅝in. best Red Deal Boards and provided with nest boxes, strong lock-up door, which is well hinged. Sliding up-and-down shutter and strong solid stamped steel wheels, 15in. in diameter and 3in. in face.

Size.	Length.	Width.	Height.
No. 1	4ft.	4ft.	6ft. 6in.
No. 2	6ft.	4ft.	6ft. 6in.
No. 3	7ft. 6in.	5ft.	7ft.
No. 4	9ft.	6ft.	7ft. 5in.

Price—No. 1 is £6 14 0 No. 2 is £7 4 0
No. 3 is 9 8 6 No. 4 is 11 19 6

Carriage paid to any station England and Wales. Prompt despatch. If immersed in Preserolium (pickled), the cost is 1/- in the £ extra.

Send for the Free Catalogue.

The "EXCELSIOR"
Scratching Shed Poultry House.

A most popular House, of which we sell large numbers. It is really tip-top value, and is used by Poultry-keepers all over the country. Made of ¾in. best Swedish Red Deal Boards on very strong framing. The boards are tongued and grooved. A wide dropping board runs the whole length of the House, nest-boxes at one end and a feeding trough at the other.

Sizes—No. 1 is 9ft. long, 5ft. wide, 5ft. 6in. high. No. 2 is 12ft. long, 6ft. wide, 5ft. 8in. high. No. 1 has two glass windows. No. 2 has three glass windows.

PRICE—No. 1, £7 8s. 0d.
Floor, 26/6 extra.
PRICE—No. 2, £9 15s. 6d.
Floor, 39/- extra.

Carriage paid England and Wales. Prompt despatch.

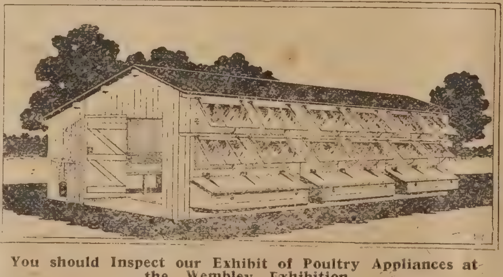
If immersed in Preserolium (pickled) the cost is 1/- in the £ extra.

The "LYNMOUTH" Laying House.

In order to meet the demand for extra head room we are now building these new Three-Quarter Roof Intensive Laying Houses. It will be noticed that the roof is not of the Lean-to Pattern but is double, thus providing extra room not only at the Apex, but over the whole interior of the house. We would specially point out the fact that this house is particularly well lighted. It has two rows of windows in front, and also windows at the back which are arranged to throw a good light on the floor under the dropping board.

SPECIFICATION.

Selected best quality ¾in. T.G. & V-jtd. Red Deal Boards. Strong framework, either of 2 x 1½ or 2 x 2 or 2 x 3, according to the size of the house. Floor laid on 3 x 2 pickled joists. Wide dropping board along the back of house with two strong perches above. Three-quarter Double Roof covered with best quality Felt, which is fastened down with strong battens. Strongly made door, battened and cross-trussed, and provided with strong lock and key. Hen-door in any desired position. Our Special Prize Medal Nest Boxes—particulars of which see on pages 6 and 7 of Catalogue. Stout hinges, casement stays for windows, and all necessary bolts, nuts and spanners for erection. The whole house is sent in sections, all carefully marked for identification for easy erection.



You should Inspect our Exhibit of Poultry Appliances at the Wembley Exhibition.

HARRY HEBDITCH, Ltd.,
(Desk J), Martock, Somerset.

SIZES AND PRICES.

No.	Long. ft.	Wide. ft.	Hght. front. ft.	Hght. back. ft.	Price. £	s.	d.	Floor. £	s.	d.
1	10	16	8	5½	27	13	0	7	9	6
2	20	16	8	5½	45	15	0	14	4	6
3	30	16	8	5½	66	12	0	20	7	0
4	40	16	8	5½	88	2	0	26	9	0
5	50	16	8	5½	109	17	0	32	12	0
6	60	16	8	5½	130	14	6	38	14	0
7	70	16	8	5½	151	5	0	44	16	6
8	80	16	8	5½	172	2	6	50	19	0
9	100	16	8	5½	215	2	0	63	3	6
10	120	16	8	5½	255	0	0	75	8	6

Carriage Paid in England and Wales. If immersed in Preserolium (pickled) the cost is 1/- in the £ extra.

SEND FOR FREE CATALOGUE.

It always pays to feed the best.

ALL serious poultry-keepers use Sussex Ground Oats. A growing list of customers bear testimony to the consistent Good Quality of the "Welco" Brand.

The bag which carries a guarantee of PURITY.

Samples on Application.

Price: 17/- per cwt.

in 4 cwt. lots.

Carriage Paid up to 200 miles.
One cwt. lot, 9d. per cwt. more.

Welco REGD

W. LOOSE & CO.,

STOCKPORT CORN MILLS,
(Tel.: Stockport 2331),
STOCKPORT.

KG

TRAP PLANOK NESTS

EGG BOXES.

PLANOK TRAPNESTS are very simply designed. Can be set in a fraction of a second. Made in sets of two.

PRICES:—

MADE-UP.		KNOCKED DOWN.	
3 sets or more	7/6.	10 sets	6/0
10 sets or more	7/0.	20 sets	5/6
Floor extra ...	8d.	30 sets	5/0
		Floor extra ...	6d.

Per set. Carriage forward.
Sample Set 10/6, Carriage paid.

PLANOK EGG BOXES.

Dovetailed, Varnished, Leatherboard fittings. Felt between layers.

PRICES:—

Size.	Single Boxes.	6 or More.	12 or More.
6 Doz.	7/0	6/8	6/3
10 "	8/6	8/0	7/6
12 "	9/3	8/9	8/3
20 "	12/6	12/0	11/6
24 "	13/3	12/8	12 0
30 "	14/6	13/9	13/0
New Special (not dovetailed)—			
30 Doz.	13/3	12/6	11/9

Per Box Carriage Forward.

Catalogue giving particulars also of CHICK BOXES and FIRELESS BROODERS, free from

WORSSAM & ABBOTT,
Pyrcroft House, CHERTSEY, SURREY.

BLACKPOOL & DISTRICT POULTRY-KEEPERS TRADING SOCIETY, LTD.,

HAWES SIDE, BLACKPOOL.
Poultry and Chick Food Specialists.

This Week's Special.

WIRE NETTING LIST.

Mesh	Gauge	12in.	18in.	24in.	36in.	48in.	60in.	72in.
1in.	20	6/10	9/9	12/6	17/10			
2in.	19			7/7	10/5	13/10	17/4	20/10
3in.	19			5/6	7/7	10/1	12/7	15/1

Carriage paid on 10 Rolls.

TERMS CASH WITH ORDER.
QUALITY EVERY TIME.

GRANULATED MOSS LITTER

For Poultry Houses.

1 2-Bushel Sack, containing about 28lb., 3/-; 2, 5/9; 3, 8/-; 5, 13/-; 2 cwt. Bales, canvas covered, 10/6.
All Carriage Paid. Cash with Order.

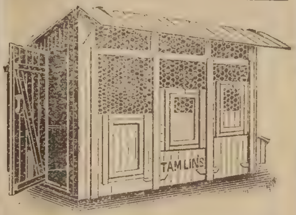
PEAT MOSS LITTER SUPPLY Co., Ltd.
32, Thorne Wharf, Commercial Road,
Blackfriars, S.E. 1.

When Answering Advertisements, Please Mention "EGGS."

TAMLIN'S

POULTRY HOUSES

These Houses are right up to date, and made of the best red deal throughout, with good workmanship, so that they are easily put together when you receive them. Last, but not least, will stand the weather.

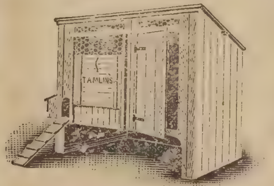


THE "HARLINGTON"
Poultry House and Scratching Shed.

No. 1.—6ft. long, 5ft. wide, 5ft. 6in. high: £5 15s. 0d.
No. 2.—8ft. long, 6ft. wide, 5ft. 6in. high: £7 7s. 0d.
Carriage Paid England and Wales.

THE "COLNBROOK" DUCK HOUSE.

Mounted on raised platform.
6ft. long, 3ft. 6in. wide, 4ft. high.
Price, Carriage paid, England and Wales: £3 13s. 0d.

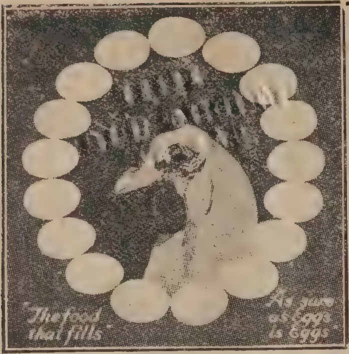


THE "KINGSTON" HOUSE.

No. 1.—6ft. long, 5ft. wide, 6ft. 0in. high: £5 10s. 0d.
No. 2.—8ft. long, 6ft. wide, 6ft. 0in. high: £7 5s. 0d.
Carr. Paid England and Wales.
Stand the Weather.
IMMEDIATE DESPATCH.

Catalogues, with 50 other designs, post free from:—

W. TAMLIN,
8, St. Margaret's Works,
TWICKENHAM, LONDON, S.W.
'Phone: 82 RICHMOND.
Station: St. Margaret's, L.S.W.R.


The food that fills
As sure as Eggs is Eggs

NITROPHOS

Brand of

PURE WHITE FISH MEAL

IS UNSURPASSED FOR UNIFORMITY OF QUALITY AND PURITY.

Two Grades—No. 1, Fine for Wet or Dry Mash; No. 2, Coarse for distribution.

ANALYSIS: Alb. 55 p.c. min.; Phosphate of Lime 17 p.c. min.; Oil 4.5 p.c. max.; Salt 4.0 p.c. max.

Sole Manufacturers—

THE GOOD RICH PRODUCTS CO., LTD.,
90, FREEMAN STREET, GRIMSBY,
MEMBERS OF THE FISH MEAL MANUFACTURERS' ASSOCIATION.

HAROLD A. HALL,
WOLLASTON HALL, WELLINGBOROUGH,
NORTHANTS,

offers for Sale this month at SPECIALLY ATTRACTIVE PRICES January and February hatched Cockerels. All pedigree birds from high-fecund stock of exceptional quality:—

R.I.R.'s.—Supergrade Egg Strain, which gained the following awards for eggs:—
LONDON DAIRY SHOW, 1st Prize.
NORTHAMPTON, 1st Prize.
WELLINGBOROUGH, 1st Prize.
And many others.

LIGHT SUSSEX.—Lister Rothschild.

WHITE LEGHORNS.—Frank Snowden and Tom Barron.

PRICE 15/-. Will command double later in the season.

Send for Mating List with Details of Pens.

MILK—CONDEMNED CONDENSED

BIG REDUCTIONS in COST of FEEDING can be made by using this Milk, which at Skim Milk Strength costs about HALF of any good Poultry Feed. Used with WONDERFUL Results on my own Farm for Poultry and Pigs.

Price for 6 Cases 5/9 per Case of 48 tins. Reductions on 2-ton lots. F.O.R.

W. H. L. HURMAN,
BANWELL, SOMERSET.

PURE SUSSEX

GROUND OATS, finest possible quality. No. 1 16/6 per cwt., No. 2 14/6 per cwt. 4 cwt. lots carr. paid Home Counties.
MEAT MEAL, 65p.c. Albs. 20/- per cwt.
MARROW BONE MEAL ... 16/- per cwt.
Write for carriage paid quotations.

JOHN WRIGHT, Poultry Food Makers, Ltd.,
TUNBRIDGE WELLS.

per 13/6 Cw

DRY MASH

(Newman's Formula).

Bags Free. Cash with order. Carr. Forw
6d. per cwt. less 5 cwt. lots, any assort
Also Chick Corn No. 1, and Chick Mash
Newman's Formula), Fish, Meat, Alf
and Germ Meal, Gluten, S.G. Oats, D
Yeast, Dried Separated Milk.
Write for Quotations.

J. M. DAFFARN & SONS, L
M.S.P.B.A.,
POULTRY FOOD SPECIALISTS
THE CROFT, ERDINGTO

A Book that has "made its mark"

IF you could see half the remarkable testimonials I have received from enthusiastic readers of my book, "Profitable Poultry," you would not be without it a day longer. I wrote it to give practical help to all interested in Poultry; because I want to see the Poultry Industry raised to a higher standard generally. I want to see small Poultry-Keepers grow into big ones, and the production of eggs and fine birds increased throughout the country. My success has proved far beyond my expectations and has encouraged me to renew my offer to send the book, post free, for 1/- to any Poultry enthusiast. Even this nominal sum will be refunded to purchasers of my stock. If you pin a 1/- P.O. to this advertisement and send it to me with your name and address, the book will be sent to you by return of post.

Have you seen the "Heaselands" Film?

E. Bostock Smith
Pedigree Utility Poultry
"Heaselands," Barham, Canterbury, Kent.

The WATERING of your fowls and chicks is of the greatest importance, with this service inefficient BEST RESULTS CANNOT BE OBTAINED. We have several types of Fountains for fowls and chicks, either in small or large flocks, which answer their purpose in every respect.

They are all easily cleaned and filled, and will not damage the head furniture of your birds.

METAL HOVERS, GRIT BOXES, BROODER LAMPS, CORN SCOOPS, ETC.

REMEMBER "VENN-CARR" goods last for years, and are Sold with a Guarantee.

Send for Illustrated Lists (Post Free).

(G) VENN CARR LTD.,
MILL STREET, MAIDSTONE.

00% Reared!

The overwhelming majority of chicks which die are killed by wrong feeding. Avoid this serious loss by using—

ARMITAGE'S No. 1. Original Dry Chick Food, containing Dried Insects—from Shell to One Month Old;

ARMITAGE'S No. 2. "Grow On" Chicken Mixture—from One to Two Months Old;

ARMITAGE'S No. 3. Chick Corn—from Two to Three Months.

RMITAGE'S
RY CHICK FOODS

Sold by Corn Merchants and Grocers everywhere.
Price List post free from—

RMITAGE BROS., Ltd., NOTTINGHAM.

(Regd. Trade Mark.)

ckhampton Poultry Grit.

THE IDEAL GRIT AT LAST.

e Grit is a natural blend of Fish-Shell
t Limestone—deposited by Nature in the
form of a conglomerate rock.
Use Renders Purchase of Expensive
Oyster, Cockle and other Shell
Unnecessary.

ected as the ONLY GRIT to be fed to
Birds at the current

"Daily Mail" & National Laying Competition.

PRICES:—
F.O.R. BAGS FREE.

ltry or Chick Size. Leckhampton Grit:
6d. per cwt.; £2 10s. 0d. per ½ ton;
£4 4s. 0d. per ton.

Quarried and Prepared Solely by
CKHAMPTON QUARRIES CO., LTD.,
HELTENHAM, GLOUCESTERSHIRE.

Help yourself, help advertisers,
d help us by mentioning
EGGS" when answering
vertisements.

SALMON'S UNSPOILED MINORCAS

Pedigreed and Trap-nested.
Eggs in season, from 7s. 6d.
Chicks Double.
Lay large eggs, and plenty of them, and win at shows in U.M.C. classes.
Customers very successful last year.
Club Judge and Hon. Sec.,
Greenlane Farm, Shamley, Guildford, Surrey.

B.B.C. | EGG BOXES

Strong Cardboard Egg Boxes fold up flat, with divisions to hold 12 eggs. Remarkable value. Per dozen 1/6 (Postage 9d.). 6 doz. 9/- (carr. paid). Cardboard Fillers for Egg Cases to hold 36 eggs, per doz. 3/6 (carr. paid).

BRENDON BOX CO., LONGFIELD, KENT.

DRY MASH FOR LAYERS.

(Mr. T. Newman's Mixture.)

13/- per Cwt. F.O.R.

BAGS INCLUDED. SAMPLE FREE.

Benjamin SYKES & SONS, LTD.,
BROWNLOW HILL MILLS,
LIVERPOOL.

EGGS are SAFE

We Pay for Eggs Broken

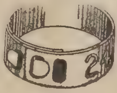
in the Patent

"POCOCK" & "CUSHION" FELT-LINED EGG BOXES,

for 12 months after purchase.
Write for List "J" Post Free.

The DAIRY OUTFIT Co Ltd
KING'S CROSS, LONDON
N.1

THE PREMIER HOUSE FOR ALUMINIUM LEG BANDS.



Adjustable Aluminium
Lock Fast — Rings. —

The Best on the Market, can be used for Light or Heavy Breeds. Numbered consecutively in bold embossed figures. 1/- 25, 1/9 50, 3/3 100, 4/6 150, 14/3 500, and with year 4d. per 100 extra. Special stamping quoted for. In Stock Series Nos. 1-25 to 1-1000.

Spiral Rings.

in Ten Bright Colours. No. 5-6 for Light Breeds, 1/- 25, 1/9 50, 3/3 100, 4/6 150, 12/6 500. No. 7-8 for Heavy Breeds. 1/3 25, 2/ 50, 3/9 100, 5/- 150, 17/6 500

Flat Band Rings.

No 5-6—1/3 25, 2/3 50, 4/- 100, 5/6 150, 15/- 500.
No 7-8—1/6 25, 2/6 50, 4/6 100, 6/- 150, 17/6 500.

E.D.G. APPLIANCE CO., LTD.,
31, Alderman's Hill, London N 13

H. B. CARRINGTON,
Blacklands, Crowhurst, Sussex.

The Senlac Duckling Bath,

ESSENTIAL TO SUCCESSFUL DUCKLING REARING.
Price and Particulars on Application.

CUSTOM HATCHING.

26/- per 150; £8 per 1,000.
Chicks returned carriage paid.
REDUCTION ON REGULAR QUANTITIES

W. P. HARMER,
"Little Hadlow" Poultry Farm,
HADLOW DOWN, SUSSEX.

BREEDERS' SPECIALITIES

Mrs. GOODDEN,

West Coker Manor, YEOVIL.

BUFF ORPINGTONS, LIGHT and RED SUSSEX, and WHITE RUNNER DUCKS.

Buffs at Harper-Adams' Trial unbeaten 3 consecutive years by any other Orpingtons. Sussex records include 315, 301, 286, 278 per bird.

J. R. JOY & CO.,

S.P.B.A., N.U.P.S.,
THE SHERIFFS, ROTHERFIELD, SUSSEX.
RHODE ISLAND REDS (S.C.),
BLACK LEGHORNS,
EXCHEQUER LEGHORNS,
Sittings, Chicks, Pullets, Cockerels.
Trap-nested Utility Stock.
Mating List on Application.

BARBERY POULTRY FARM,

STOCKBRIDGE, HANTS.

Breeders of Trapnested W. Wyandottes, W. Leghorns, Black Leghorns, R.I. Reds, Light Sussex.

Eggs from 6s. 6d. doz., £2 2s. per 100.
Price Lists on Application.

The PURLEY POULTRY FARM,

PURLEY, SURREY.

Gold Medal Bentley, with Cuckoo Leghorns

Leghorns (White, Black, Brown, or Cuckoo).
White Wyandottes.
Rhode Island Reds.
Buff Rocks.
Light Sussex.
Anconas.
Houdans.
Faverolles. La Bresse

Silver Medal, Harper-Adams', with Black Bresse. 'Phone: Purley 1194.

E. R. HOOD, S.P.B.A.,

Greystones, STOCKSFIELDS-ON-TYNE,
FOR
White Wyandottes
PEDIGREE STOCK ONLY.)

JAN., FEB., MARCH, 1925, PULLETS

Pure Rhode I. Red, and Brown Leghorn-Light Sussex Cross. All bred from high-producing hens. Prices from 10/6 each.
Carriage Paid on Six.
LIST FREE.

W. A. ROBERTS,
Broughton Poultry Farm,
GREAT BROMLEY —— COLCHESTER.

MRS. NORMAN PARISH

(Barnevelder Club, M.S.P.B.A.),
SPECIALIST BREEDER OF
BARNEVELDERS.
Healthy, Hardy, North Country Stock. Originally Imported. Many prizes won.
REASONABLE PRICES.
"AVONA," BRAMHALL, CHESHIRE.
('Phone: Bramhall 58.)

MAJOR DISNEY-ROEBUCK,

Specialist Breeder and Exporter of Trap-nested Stock.
LIGHT SUSSEX, WHITE LEGHORNS
Pullets, all ages, and Stock Cockerels now available.
Eggs for Table Birds supplied in large quantities, moderate prices.
PUPILS thoroughly trained.
Hoo Meavy P.F, YELVERTON, S. DEVON.

P. N. SHELLEY, S.P.B.A., N.U.P.S.,

TITTENSOR. STOKE-ON-TRENT.

RHODE ISLAND REDS,

3 Months' Old Pullets 10/0
4 " " " 12/6
5-6 " " " 15/0

MISS KIRKBY,

LITTLE BRAZIERS END, TRING, HERTS.
BREEDER OF
LIGHT SUSSEX, WHITE RUNNERS.
AYLESBURY DUCKS.
Harrison Bell Strain.
Book Stock Birds Now. Reasonable Prices.
Full Particulars on Application.

E. BOSTOCK SMITH,

Breeder of the Highest Class Pedigree Utility Poultry.

"Heaselands," BARHAM, CANTERBURY.
'Phone—Barham 9.

White Leghorns.
White Wyandottes.
Rhode Island Reds.
Light Sussex.
Black Mendels.
Black Leghorns.

P. E. WHITE, THE "Eggfo" Farm,

MARKET DRAYTON, SALOP.
BUFF ROCKS.
BUFF and BLACK LEGHORNS.
RHODE ISLAND REDS.
WHITE WYANDOTTES.
Winner of Gold, Silver and Bronze Medals in Open Laying Competitions.

WHITE'S "STAMINO" & "EGGFLO"

POULTRY FOODS.
"STAMINO" CHICKEN MEAL.
"EGGFLO" LAYING MEAL.
RICH IN VITAMINES.
22/- per cwt., carriage paid.
WHITE, MARKET DRAYTON, SALOP.

Wellingham House P.F.

LEWES.
Miss Malcolm. Mrs. Cecil Pember.
Finest Pedigree Trap-Nested Stock.
W. LEGHORNS, R.I. REDS (S.C.) L. SUSSEX.
Individually Hatched Stock Cockerels.
Three Months' Pullets. L2 Breeding Hens.
Telephone: 157 Lewes. Telegrams: Ringmer

Major & Mrs. R. C. EVERETT,

CASTELMER POULTRY FARM,
KINGSTON, LEWES.

LIGHT SUSSEX,
WHITE WYANDOTTES,
EXCHEQUER LEGHORNS.

TRAPNESTED UTILITY STOCK.
Three Months Old Pullets.
STOCK COCKERELS. BREEDING PENS.

MISS N. B. MADDISON,

M.S.P.B.A.,
DANE HILL, SUSSEX.
Tel.: 24 Dane Hill.
Specialist Breeder, RHODE ISLAND REDS.
Winner S.P.B.A. Laying Test Silver Cups, Medals, and many prizes gained.
Pedigree LIGHT SUSSEX & W. LEGHORNS
EGGS, PULLETS, STOCK COCKERELS.
Inspection Invited.

C. H. CHANDLER,

P.C., B.B.C.,
Stonestile Farm, CHARING, KENT.
BARNEVELDERS.
250 PULLETS (1925) FOR SALE.
Basis of Price 12/6 at 4 months old.
BOOK NOW.

C. H. CHANDLER,

P.C., B.B.C.,
Stonestile Farm, CHARING, KENT.
LIGHT SUSSEX (Utility).

FOR SALE—100 Jan. 1925 Hatched Pullets.
200 Feb. ditto. ditto.
250 March ditto. ditto.

Quotations given; Price according to age.
14 Prizes and Awards 1924. Booking Now.

Miss O'BRIEN,

White Bresse,
Exchequer Leghorn,
All Stock Trap-Nested.

CHARLEVILLE COTTAGE, ENNISKERRY,
Co. WICKLOW.

PEDIGREE TRAPNESTED
WHITE WYANDOTTES.
Individually-Bred Stock Cockerels.

A FEW TRAPNESTED BREEDING HENS AVAILABLE

MRS. BURGESS,

S.P.B.A., N.U.P.S.
WOODSIDE, TENTERDEN, KENT.

SOUTH HANTS POULTRY FARM,

ROMSEY.

R. I. Reds.
W. Wyandottes.
W. Leghorns.

Gold and Silver Medals and Certificates at Harper - Adams' Laying Trials.

S.P.B.A. WINTER AVERAGES 56-60.
12 MONTHS' FLOCK AVERAGES OVER 200.
BREEDING STOCK FOR SALE.

MOAT HALL POULTRY FARM,

OUSEBURN, YORK.
Capt. Tunstill and C. S. Charlton,
S.P.B.A., P.C.
WHITE WYANDOTTES, W. LEGHORNS.
1923 and 1924 hatched Hens in both breeds at reasonable prices on 4 days' approval for cash or deposit, carriage paid.

MISS ARCLES.

Pullets and Cockerels Now for Sale at Reasonable Prices, bred from my well-known laying strains, White Wyandottes and White Leghorns. W.W. at present 11th Harper-Adams and 2nd Midland.

ANSTEY POULTRY FARM,
ALTON, HANTS.

H. R. HUNTER, S.P.B.A. and Bresse Club.

W. BRESSE, 1ST of the Breed National Test.
R.I.R. (S.C.), 1ST of the Breed Hampshire Test.
W. LEGHORNS, 1ST of all Lt Breeds Hampshire Test.
South Winchester P.F., Twyford, Hants.
Catalogues on Application.

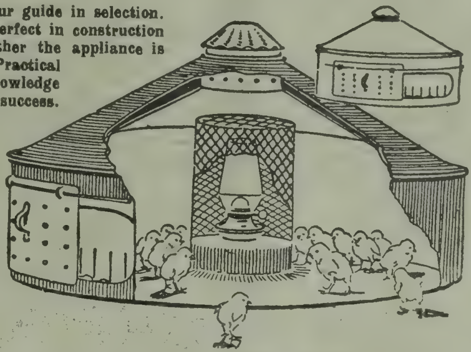
SAVE BY BUYING FROM

Be Safe. Buy the Brooder that has been tested for over 12 years.

THORNBER'S SILVER HEN.

The Pioneer All-Metal Brooder that Equals Nature.

If you are thinking of purchasing a Brooder, let the test of time be your guide in selection. There are many Brooders offered for sale, but not every one is really perfect in construction or performance. Experience is a fine teacher, and time proves whether the appliance is right or not. In purchasing a Silver Hen you are safeguarded. Practical men with years of experience have put their very best work and knowledge into its construction. For over twelve years it has met with record success. In many instances the Brooder purchased years and years ago is still in use—a remarkable tribute to its workmanship and lasting life. The Brooder is self-contained. A special safety pattern British Lamp, holding 24 hours' supply of oil, the whole easily removed for cleaning without disturbing the chicks. Lamp is absolutely smokeless. Note large chick exit with cloth curtain, and metal rat-proof door.

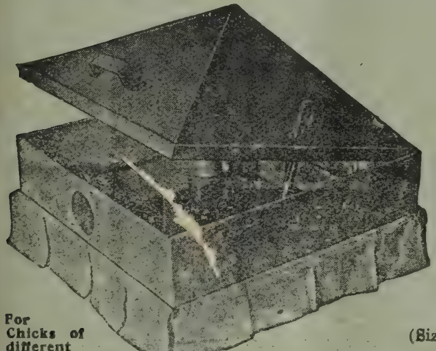


50 CHICK SIZE	100 CHICK SIZE
23/6	**40/-**

CARRIAGE PAID BY PASSENGER TRAIN.
IMMEDIATE DELIVERY.

If you want a Hover, the best is Thornber's
SILVER HOVER.

An appliance that has no equal.



For Chicks of different ages.

Carr. Paid by passenger train.

100 Chick Size (Size 24in. x 24in.),

42/6

The same forethought is behind the Silver Hover. It is the work of PRACTICAL men—men who KNOW the pitfalls and who guard against them. It is so constructed that each batch of chicks receive just the right temperature most suited to them. In this way there are no thirsty chicks in the Hover, and therefore no White Diarrhoea. During the day the Chicks run in and out through the curtains placed to retain the heat, but at night these may be covered with galvanised plates, making the Chicks secure and the Hover rat-proof.

Order Now. Immediate Delivery Guaranteed.

THE RIBBLESDALE—

THE HOUSE WITHOUT A FAULT.

Send at once for full particulars of its many special features. It is the house you will eventually buy.

Sizes from 8ft. x 6ft. x 7ft. x 8ft.

PRICES FROM **£12-17-6**

Carriage Paid. Absolutely complete, sent in sections for easy erection.

You can Purchase by Easy Payments

If you prefer to buy by deferred payments, you may do so through the SERVICE FURNISHING SOCIETY, LTD., 289-292, High Holborn, London, W.C. 1. Send p.c to them for full particulars. Cash orders must be sent to Thornbers, Mytholmroyd.

FREE! 136 page Book

Send p.c. for copy of Thornber's Annual. Full of useful advice on Incubation, etc., etc.

THORNBER BROS.,

31, MYTHOLMROYD,
— YORKSHIRE. —

Successful chick rearing and increased egg production AT LESS COST positively assured by feeding

"DENTO" MARROW BONE MEAL and "DENTO" MEAT AND BONE MEAL

THE IDEAL ANIMAL PRODUCTS OF SUPERIOR AND GUARANTEED QUALITY.

Read this UNSOLICITED TESTIMONIAL:—

Heydown, Heathfield, Sussex.
2nd May, 1924.

The Denton Manufacturing Co., Newhaven, Sussex.

Sirs, Would you kindly forward, as soon as possible, one ton of Meat and Bone Meal and half-ton Marrow Bone Meal.

You will doubtless be interested to know that we are now using the former for the whole of our 5,000 laying stock in place of Fish Meal.

Your Marrow Bone Meal we find excellent for inclusion in our rearing and growing mashes; in fact, the "DENTO" products have entirely superseded Fish Meal at "Heydown." in all the mashes; our results are thereby improved, in addition to effecting a considerable financial saving.

Should you be in our neighbourhood, we shall be delighted to show you round our 90-acre farm, and feel sure that you would be particularly interested in our 11,000 chicks of various ages, which have all had a proportion of your meals, in place of Fish Meal, from the seventh day.

Yours faithfully, p.p. John H. Dowden and Son,
JOHN H. DOWDEN.

"DENTO" Marrow Bone Meal, 18/- owt. "DENTO" Meat and Bone Meal, 20/- owt.

Carriage paid England and Wales. Discounts for Quantities. Sample on application to:—

THE DENTON MANUFACTURING CO., Denton, Newhaven, SUSSEX.

The Red Mite

The Red Mite visits the birds to feed at night. Its real home is in the cracks and crevices of the fowl-houses. The only way to stamp out vermin and the diseases they cause is to dust all woodwork thoroughly with IZAL Powder, and spray runs and wash feeding utensils regularly with IZAL.

IZAL kills germs and parasites. It does not lose power when exposed to the air and it is the safest, surest and most economical disinfectant you can use.

Fluid: Household Size, 1/9; Small Size, 1/3; ½-Gallon, 6/-.
Powder: Household Sizes, 1/- and 1/6; 7-lb. Bags, 4/3.

IZAL

KILLS GERMS & PARASITES

A New Publication—"Poultry Husbandry"—6d. post free, on application.

Write for other literature, Free, to Newton Chambers and Co., Ltd., Nr. Sheffield, England.

Printed for the Proprietors by the City and South London Printing and Publishing Co., Ltd. (T.U.), 94, Farncombe Street, S.E.
Edited by Mr. Tom Newman, and published by the Scientific Poultry Breeders' Association, Rudgwick.

UNIVERSITY OF ILLINOIS-URBANA
3 0112 120377244